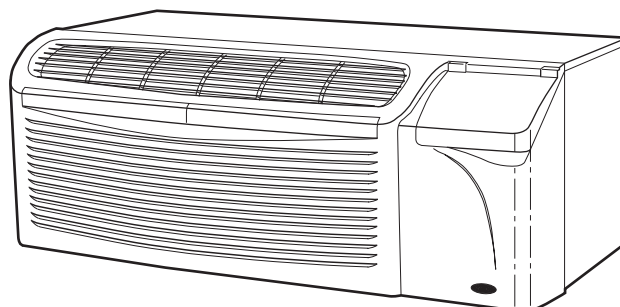


# ARCHITECTS AND ENGINEERS' MANUAL

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## MODEL 52C PACKAGED TERMINAL AIR CONDITIONERS AND HEAT PUMPS



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# APPLICATIONS

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Whether you are designing a new structure or replacing packaged terminal air conditioning units in an existing building, Carrier will meet your needs.

- Hotels and motels
- Nursing homes and assisted living care centers
- Offices
- Apartments
- Single-family dwellings
- Home conversions and residential add-ons

## NEW CONSTRUCTION

The Carrier 52C Packaged Terminal Air Conditioning (PTAC) unit is designed to meet the needs of the architect, engineer, and contractor. For unit installation, Carrier's expert support network will assist in all applicable aspects of the construction project, from preparing a budget to start-up.

### ADVANTAGES FOR NEW CONSTRUCTION

#### Design Flexibility For The Architect/Engineer

- Super-quiet performance, indoors and out
- No bulky duct system
- No separate equipment room
- No water towers or additional cooling equipment
- No complex match-up of different HVAC components
- Less sensitivity to building orientation (sun, wind, shade)
- Optional architectural grille to permit custom exterior appearance

#### Initial Cost Savings For The Building Owner

- No expensive component HVAC system purchase
- No equipment room or maintenance engineering staff
- Two-part delivery to minimize on-site damage

- Weather-protected wall sleeve that goes in place during construction; chassis that slides in place after construction
- No seasonal changeover required for cooling or heating — units are self-contained comfort systems

### Lower Operating Costs And Reliable Comfort For The Occupant

- Heat pump models offer substantial savings over models with conventional electric resistance heaters
- Individual units allow tenants to choose the degree of comfort and operating economy
- Rapid servicing reduces downtime: complete chassis can be replaced in minutes without disrupting other occupants.
- Each unit operates independently of other units in the building. No dependency by building on central HVAC system.

### Retrofit/Replacement

If you are replacing existing units, your options include:

- Replacing the existing wall sleeve with a Carrier Weather Last™ sleeve
- Using an existing sleeve made by another manufacturer. The 52C Series chassis will fit existing GE, Amana, and Trane wall sleeves. All other sleeve applications need prior approval from Carrier.

## CARRIER WARRANTY

Carrier's five-year warranty is the most comprehensive in the industry. Carrier provides:

- Full coverage for parts and labor for first year.
- Four additional years of full coverage on sealed refrigeration systems.
- Limited second through fifth year coverage on non-refrigeration system parts.

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## APPLICATION CONSIDERATIONS

Installation instructions are shipped with all PTAC units. It is important that air conditioning systems be properly sized and installed for each application in order to achieve the desired temperature and humidity levels within the space to be conditioned. It is strongly recommended that a professional engineer match the PTAC units with the building structure and climate.

The following application considerations are all important in choosing the proper PTAC system for the building structure.

### Undersizing

If a PTAC unit is undersized (cooling capacity is less than required capacity for an application), the unit will not be able to cool the space down to the desired temperature during very hot days. The result could be warm and humid or warm and dry conditioned space.

### Oversizing

If a PTAC unit is oversized (cooling capacity is greater than required capacity for the specific application), the unit will cool the space down to the desired temperature too quickly.

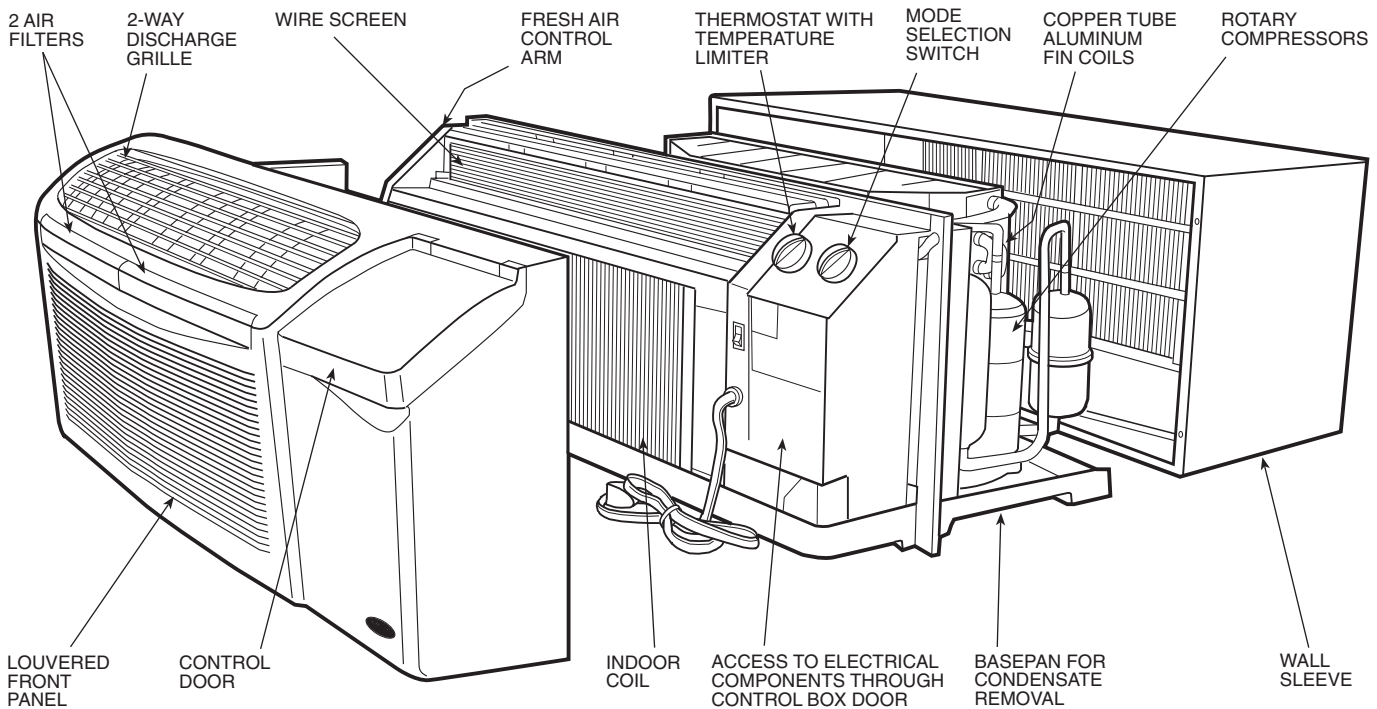
The unit will cycle on and off, however, dehumidification only takes place when the unit is operating. The result of this type of application in a hot and/or humid climate would be a cool, yet excessively humid, space.

### Air Infiltration

Excessive air infiltration can intensify problems associated with undersizing or oversizing a PTAC unit. This can be the cause of insufficient cooling, dehumidification, or heating. Sources of air infiltration include vents, gaps around windows and doors, and improperly sealed floors, ceilings or wall joints.

# PRODUCT OVERVIEW

This section summarizes product features covered in detail in later sections of this manual:



**Polymer, Metal or Extended Wall Sleeve** — Designed for rugged duty, acoustic absorption, and attractive appearance for years to come.

**Rotary Compressors** — Provide quiet, reliable operation.

**Copper Tube Aluminum Fin Coils** — Enhanced coils provide durability, high performance, and ease of operation.

**Fresh Air Control Arm** — Allows outdoor air into room through vent filter for improved air quality.

**Fan Cycle Switch** — Dual options:

- (1) Continuous fan operation.
- (2) Cycle fan ON and OFF with compressor operation.

**Thermostat with Temperature Limiter** — Provides improved temperature control with a temperature limiter that allows temperature range restraints for the unit by making a simple adjustment.

**Control Door** — Provides protection for controls and enhances appearance.

**Easy Access to Electrical Components** — Simply remove two screws and drop down the control box door.

**Improved Condensate Removal** — Minimizes condensate water on outside of building.

**New Two-Piece Filter Design** — Provides improved air filtration and can be removed easily for cleaning.

**Durable Discharge Grille** — Made of polycarbonate; holds up under the toughest conditions.

**Louvered Front Panel** — Made of high impact polystyrene. Provides improved performance and quiet operation.

**Mode Selection Switch** — Rotary switch allows for easy selection of operating mode.

# PRODUCT FEATURES AND BENEFITS

---

The 52C model is a single-package, through-the-wall unit for heating and cooling hotel rooms, offices, apartments, condominiums, and residential additions. The 52C Series features include:

- Improved sound quality for quiet operation
- Exceeds ARI efficiency requirements with exceptional energy efficiency ratios (EERs)
- Easy access, lifetime filters
- User friendly controls
- Easy to read dials
- Enhanced temperature and humidity control
- Improved condensate removal system
- Multi-room structure design
- Fixed wall sleeve, slide-out chassis
- Attractive, durable cabinet featuring new design
- Chassis that easily retrofits to most major competitors' sleeves without use of retrofit kit
- Low operating costs
- No bulky duct system
- No seasonal changeover

## QUIET OPERATION

Occupants and neighbors are protected against noise intrusion. Indoor sound reduction is achieved because of the unit's design and its louvered front cover, indoor scroll and blower, and heavy gage unit partition. Rotary compressors provide quiet, reliable operation. The indoor scroll provides a more uniform air discharge.

The new aerodynamic split condenser shroud design improves airflow and reduces outdoor noise, providing a more relaxing outdoor environment. The new split design allows for easy access to the outdoor coil to facilitate routine cleaning of the coil. The propeller-type fan design allows for efficient low-speed operation.

## MOST EFFICIENT PERFORMANCE

High EERs provide excellent operating economy. The system operates without bulky ductwork, separate equipment room, and complex match-up of different components. Heating and Cooling modes are available without seasonal changeover.

## EFFICIENT FAN MOTOR

An efficient, totally enclosed PSC (permanent split capacitor) fan motor provides a choice of high or low speeds for heating and cooling. A fan-only setting provides air circulation. **The fan motor requires no maintenance and no lubrication.**



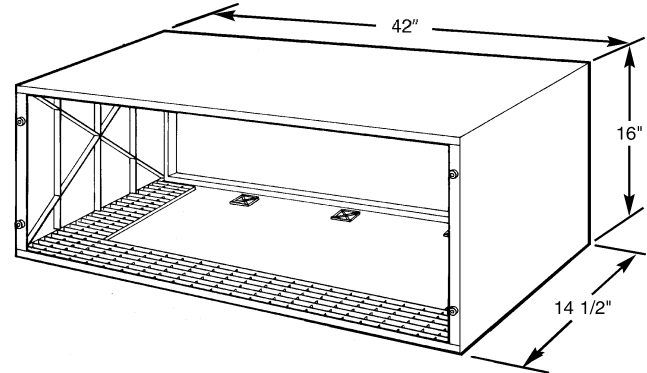
# PRODUCT FEATURES AND BENEFITS (cont)

## NO-RUST WEATHER LAST™ WALL SLEEVE AND FRONT PANEL

The indoor front panel and non-insulated wall sleeve use nonmetallic compounds that never rust or corrode, do not support combustion, and do not give off toxic fumes. The weather-resistant feature exceeds requirements of Underwriters' Laboratories and resists damage caused by impact and scratching. The Weather Last feature also insulates and has up to 10 times the acoustic absorption of metal cabinets.

Insulated polymer wall sleeves combine all of the above features with the addition of factory-installed insulation. The insulation helps to reduce heat loss, save energy and provides better sound absorption.

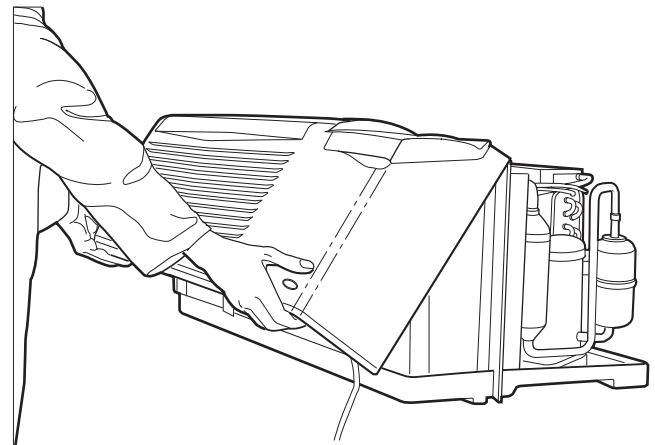
Carrier's metal wall sleeves are available in a variety of sizes for most standard and deep wall applications. All metal wall sleeves come with factory-installed closed cell insulation, designed to minimize heat loss and reduce outdoor noise transmissions into the room.



**Wall Sleeve**

## REMOVABLE FRONT PANEL

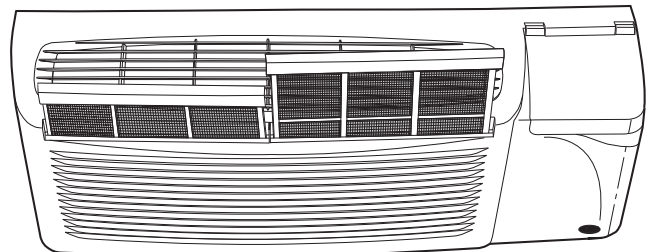
The louvered front panel fits firmly onto the chassis and features easy removal for service. It provides front air intake to enhance performance and quiet operation. It also allows the option of flush mounting PTAC unit to the floor. If desired, the front panel can be secured to the unit with field-supplied screws.



**Removable Front Panel**

## TWO-PIECE LIFETIME INDOOR FILTER

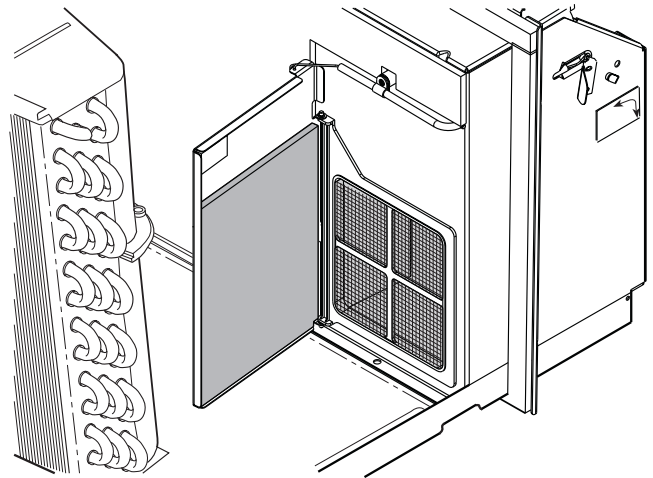
New two-piece removable filters easily slide in and out from the front of the PTAC unit and are interchangeable. The front panel does not need to be removed to access or change the filters.



**Two-Piece Indoor Filter**

## WASHABLE VENT AIR FILTER

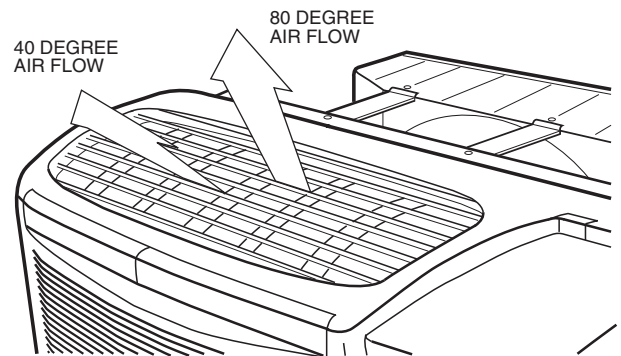
The unique vent system is activated by a two-position control. Fresh outside air is redirected by the vent door to an inside low-pressure area. A molded plastic filter prevents dirt and debris from entering the room side of the unit. The vent mechanism is made from noncorrosive material ensuring reliable operation. A magnet on the door and high-pressure airflow create a tight, draft-free seal when the vent door is closed. *The vent will provide 50 CFM of fresh air.*



**Outdoor Vent Filter Location**

## BI-DIRECTIONAL DISCHARGE GRILLE

The discharge grille is constructed of durable polycarbonate and is reversible. Air flows upward at a 40 degree angle to the floor but can easily be adjusted to an 80 degree angle to the floor.



**Reversible Polycarbonate Discharge Grille**

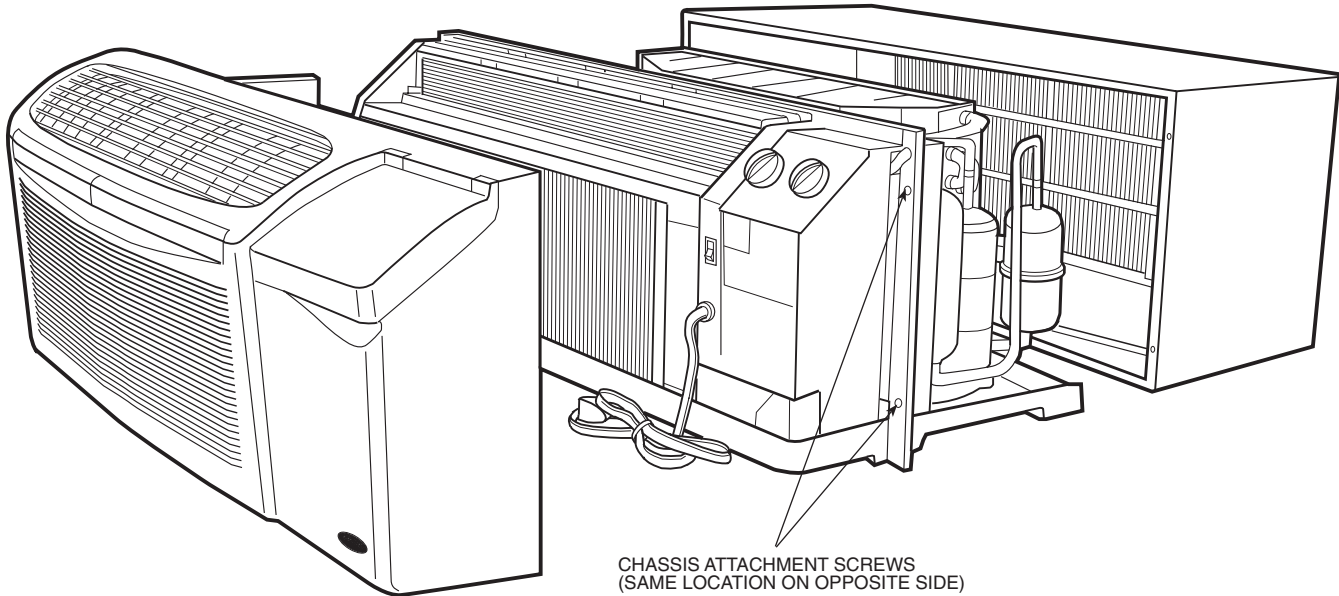


# PRODUCT FEATURES AND BENEFITS (cont)

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## EASY ACCESS TO CHASSIS

Access to the chassis simply requires removing four screws and then sliding the chassis out of the sleeve for service.



**Easy Service Access**

## HIDDEN CONTROLS

The factory-wired control box houses all control components and is quickly accessible without removing the chassis from the wall sleeve. By simply removing two screws on control box, the hinged door lowers, providing quick access to all the electrical components. The wiring diagram is located on the front of the control box door.

## Temperature Limiter and Control Knob

The limiter reduces operating costs by allowing the owner to control the range of cooling and heating temperatures available to the occupant. It is located under the front panel on control box, out of the occupant's sight. Each setting on the limiter is equivalent to 5° F and the range of temperature settings available to the owner is from 60 to 90 F. The limiter is not pre-set at the factory (providing full range for the occupant).

## Outdoor Air Vent Control

Control of the outdoor-air vent is handled by a vent handle located under the front panel on the left side of the unit. This handle rotates to manually open and close the outdoor vent. *The vent will provide 50 CFM of fresh air.*

## Fan Cycle Switch

The fan cycle switch (not available on wall thermostat models) allows the fan to operate in 2 modes:

- Continuous — This setting allows the fan to run continuously, circulating air even when the temperature setting has been satisfied. This setting, which helps to keep the room temperature closer to the thermostat setting, is used for maximum comfort.
- Cycle — This setting allows the fan to cycle on and off with the compressor during heating or cooling. The fan stops when the temperature setting is reached. The longer unit off-time makes this option more energy-efficient with only slightly wider variations in room temperature.



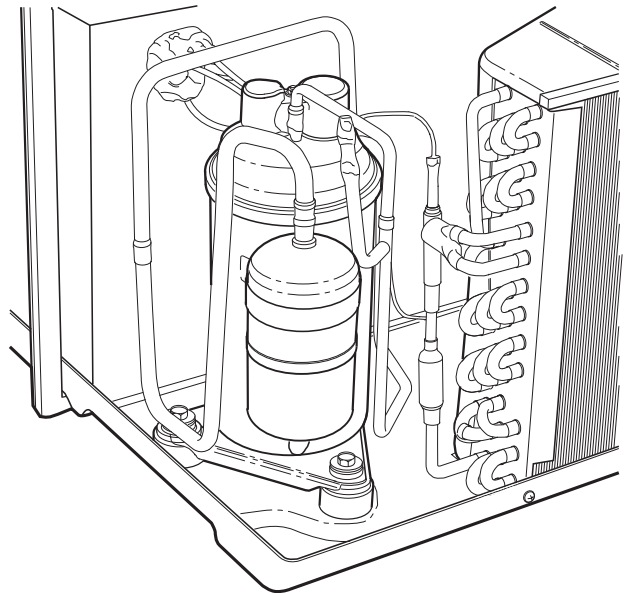
## ENHANCED COPPER TUBING

Enhanced copper tubing is more efficient and durable and can be repaired in the field, if required.

Because copper is a very stable metal, it is durable and resists corrosion. Enhanced copper tubing increases:

- heat transfer capability
- the efficiency of the cooling and heating processes
- thermal conductivity (by creating additional tube surface and turbulent refrigerant gas flow)

Every Carrier PTAC coil undergoes thorough leak testing and pressure testing up to 350 lbs per square inch.



**Enhanced Copper Tubing**

## SEAMLESS BASEPAN

Seamless drawn basepan walls add protection against water accumulation resulting from storm-driven rain with heavy wind.

Carrier's deep basepan holds up to 1½ gallons of water without spilling. Closed cell foam insulators are located between the basepan and coils, keeping coils from direct contact with the basepan and providing additional protection against corrosion.

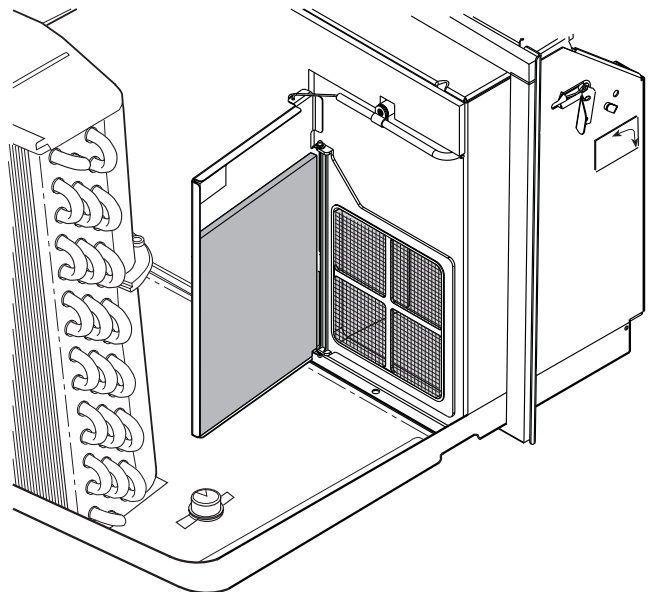
## CONDENSATE DRAIN VALVE

The temperature-activated drain valve opens when the outdoor temperature drops below 45 F to prevent water from freezing in the basepan.

## CONDENSATE REMOVAL SYSTEM

Carrier's 52C Series units have an improved condensate (water) disposal system. In addition to slinger ring technology, Carrier has developed and patented a Condensate Orifice. The orifice, along with the slinger ring, draws in water which is sprayed up onto the outdoor coil. The water then evaporates, thus providing better disposal of excess condensate, improving unit efficiency.

NOTE: If it is necessary to remove 100% of the condensate, we recommend using the Carrier Drain Kit (Part No.: DRAIN-KIT-4PK).



**Deep Basepan Protects Against Water Accumulation**

# PRODUCT FEATURES AND BENEFITS (cont)

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## HEAT PUMPS PAY THEIR OWN WAY

Heat pump models are available at a nominal additional cost. In many locales, the payback is realized in just a few months. Cost and payback details are provided on the next page.

## Special Features

### *Two-Stage Indoor Thermostat:*

The indoor thermostat senses the indoor temperature and automatically turns on the electric heat to warm the room quickly. After the desired temperature conditions have been satisfied, the thermostat automatically switches to heat pump mode. If compressor failure occurs, the thermostat will provide backup electric heat automatically.

### *Outdoor Thermostat:*

During the heating cycle, the outdoor thermostat senses outdoor coil temperature. It switches the unit to electric heat mode when the outdoor coil temperature is 20 F or below (approximately 35 F outdoor air temperature). The thermostat switches the unit back to heat pump mode when the outdoor coil temperature rises above 35 F (approximately 45 F outdoor air temperature), which is enough to provide heat to meet demand. The entire operation is completely automatic.

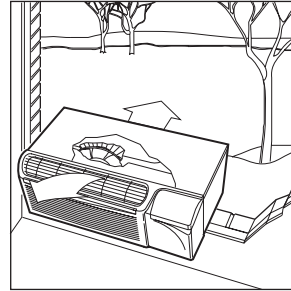
### *Reversing Valve:*

The reversing valve provides quiet refrigerant flow after the unit shuts off. The valve controls the direction of refrigerant flow for both heating and cooling functions and remains energized as long as the controls are in the heat position. When the cooling controls are activated, the valve automatically reverses to the cooling position.

### *Manual Compressor Override Switch:*

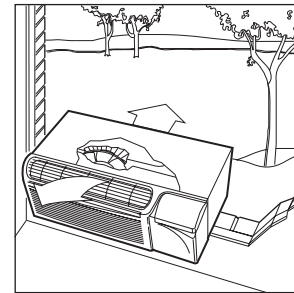
This switch completely locks out the compressor. Note that the compressor and heater do not operate at the same time, thus conserving energy.

## How The Heat Pump Works



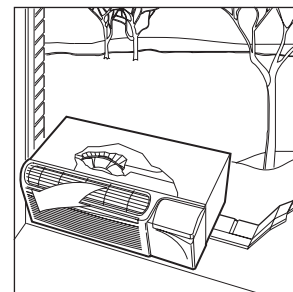
### *In Hot Weather:*

Carrier's 52C series units provide indoor comfort in the same manner as conventional air conditioners, removing heat and humidity from indoor air. The heat and humidity is released to the outdoors. Carrier's high efficiency design saves energy and reduces cooling costs.



### *In Cool Weather:*

When the outdoor coil temperature is above 20 F (approximately 35 F outdoor air temperature), the heat pump draws heat from outdoor air and uses it to heat indoor air. Since heat is transferred and not produced, Carrier's heat pump uses less electricity and reduces energy costs significantly.



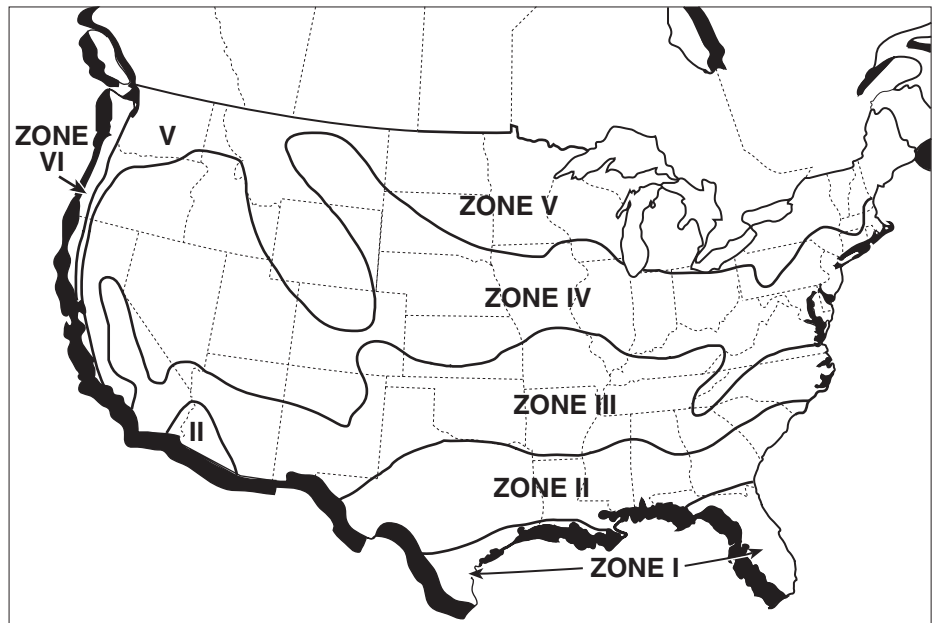
### *In Sub-Freezing Weather:*

When the outdoor coil temperature falls below 20 F (approximately 35 F outdoor air temperature), the unit automatically switches on a built-in electric heater. The compressor stops and a blower circulates warm air produced by the heater. When the outdoor coil temperature rises above 35 F (approximately 45 F outdoor air temperature), heat pump operation resumes automatically.

# HEAT PUMP ENERGY SAVINGS

Heat pumps save more on operating costs during the heating cycle than heat/cool models. The table below shows that the higher initial cost of purchasing a heat pump is quickly made up in lower operating costs.

Use the map to identify the climate zone's designated number. Reading down the left-hand column of the table, select the cost/kWh rate in this zone that most closely approximates your local rate. The approximated savings and payback period is found at the intersection of your zone/rate line and the desired Btuh Cooling Capacity column. Exact savings are determined by lifestyle, local electrical rates, and climatic conditions.



**CARRIER HEAT PUMP INITIAL COST VERSUS SAVINGS OVER HEAT/COOL MODELS**

| ZONE | ELECTRIC COST/KWH | 7000 BTUH <sup>1</sup> COOLING CAPACITY | \$60 PREMIUM      | 9000 BTUH <sup>2</sup> COOLING CAPACITY | \$75 PREMIUM      | 12000 BTUH <sup>2</sup> COOLING CAPACITY | \$90 PREMIUM      | 15000 BTUH <sup>3</sup> COOLING CAPACITY | \$110 PREMIUM     |
|------|-------------------|---|-------------------|---|-------------------|--|-------------------|--|-------------------|
|      |                   | Annual Savings*                         | Payback in Months | Annual Savings*                         | Payback in Months | Annual Savings*                          | Payback in Months | Annual Savings*                          | Payback in Months |
| I    | \$.06             | \$ 31.00                                | 23                | \$ 58.07                                | 16                | \$ 63.39                                 | 17                | \$ 77.45                                 | 17                |
|      | \$.08             | \$ 41.69                                | 17                | \$ 76.74                                | 12                | \$ 82.52                                 | 13                | \$103.64                                 | 13                |
|      | \$.10             | \$ 52.38                                | 14                | \$ 96.44                                | 9                 | \$102.86                                 | 11                | \$129.82                                 | 10                |
| II   | \$.06             | \$ 47.03                                | 15                | \$ 87.11                                | 10                | \$ 94.48                                 | 11                | \$113.45                                 | 12                |
|      | \$.08             | \$ 63.07                                | 11                | \$116.15                                | 8                 | \$126.78                                 | 9                 | \$150.55                                 | 9                 |
|      | \$.10             | \$ 79.10                                | 9                 | \$145.19                                | 9                 | \$157.87                                 | 7                 | \$187.64                                 | 7                 |
| III  | \$.06             | \$112.24                                | 6                 | \$108.89                                | 8                 | \$114.82                                 | 9                 | \$138.55                                 | 10                |
|      | \$.08             | \$148.59                                | 5                 | \$144.15                                | 6                 | \$153.09                                 | 7                 | \$185.45                                 | 7                 |
|      | \$.10             | \$186.00                                | 4                 | \$168.00                                | 5                 | \$191.36                                 | 6                 | \$231.27                                 | 6                 |
| IV   | \$.06             | \$ 42.76                                | 17                | \$100.59                                | 9                 | \$105.25                                 | 10                | \$127.64                                 | 10                |
|      | \$.08             | \$ 69.48                                | 10                | \$132.74                                | 7                 | \$138.74                                 | 8                 | \$170.18                                 | 8                 |
|      | \$.10             | \$ 87.66                                | 8                 | \$166.96                                | 5                 | \$174.62                                 | 6                 | \$211.64                                 | 6                 |
|      | \$.12             | \$103.69                                | 7                 | \$200.15                                | 4                 | \$209.30                                 | 5                 | \$255.27                                 | 5                 |
|      | \$.14             | \$121.86                                | 6                 | \$233.33                                | 4                 | \$243.98                                 | 4                 | \$297.82                                 | 4                 |
| V    | \$.06             | \$ 41.69                                | 17                | \$ 78.81                                | 11                | \$ 82.52                                 | 13                | \$ 99.27                                 | 13                |
|      | \$.08             | \$ 55.59                                | 13                | \$105.78                                | 9                 | \$110.03                                 | 10                | \$133.09                                 | 10                |
|      | \$.10             | \$ 69.48                                | 10                | \$131.70                                | 7                 | \$137.54                                 | 8                 | \$166.91                                 | 8                 |
|      | \$.12             | \$ 83.38                                | 9                 | \$158.67                                | 6                 | \$165.05                                 | 7                 | \$199.64                                 | 7                 |
|      | \$.14             | \$ 97.28                                | 7                 | \$189.59                                | 5                 | \$192.56                                 | 6                 | \$233.45                                 | 6                 |
| VI   | \$.06             | \$110.10                                | 7                 | \$206.37                                | 4                 | \$221.26                                 | 5                 | \$268.36                                 | 5                 |
|      | \$.08             | \$146.45                                | 5                 | \$275.85                                | 3                 | \$295.41                                 | 4                 | \$357.82                                 | 4                 |
|      | \$.10             | \$182.79                                | 4                 | \$344.30                                | 3                 | \$368.37                                 | 3                 | \$447.27                                 | 3                 |
|      | \$.12             | \$220.21                                | 3                 | \$413.78                                | 2                 | \$442.52                                 | 2                 | \$536.73                                 | 2                 |

## LEGEND

**kWH** — Kilowatt Hour

\*Computer projections based on full cooling load at 95° F. Savings projected for 230 v ratings.

<sup>1</sup>Heating load is 5,000 Btuh at winter design point temperature.

<sup>2</sup>Heating load is 10,000 Btuh at winter design point temperature.

<sup>3</sup>Heating load is 15,000 Btuh at winter design point temperature.

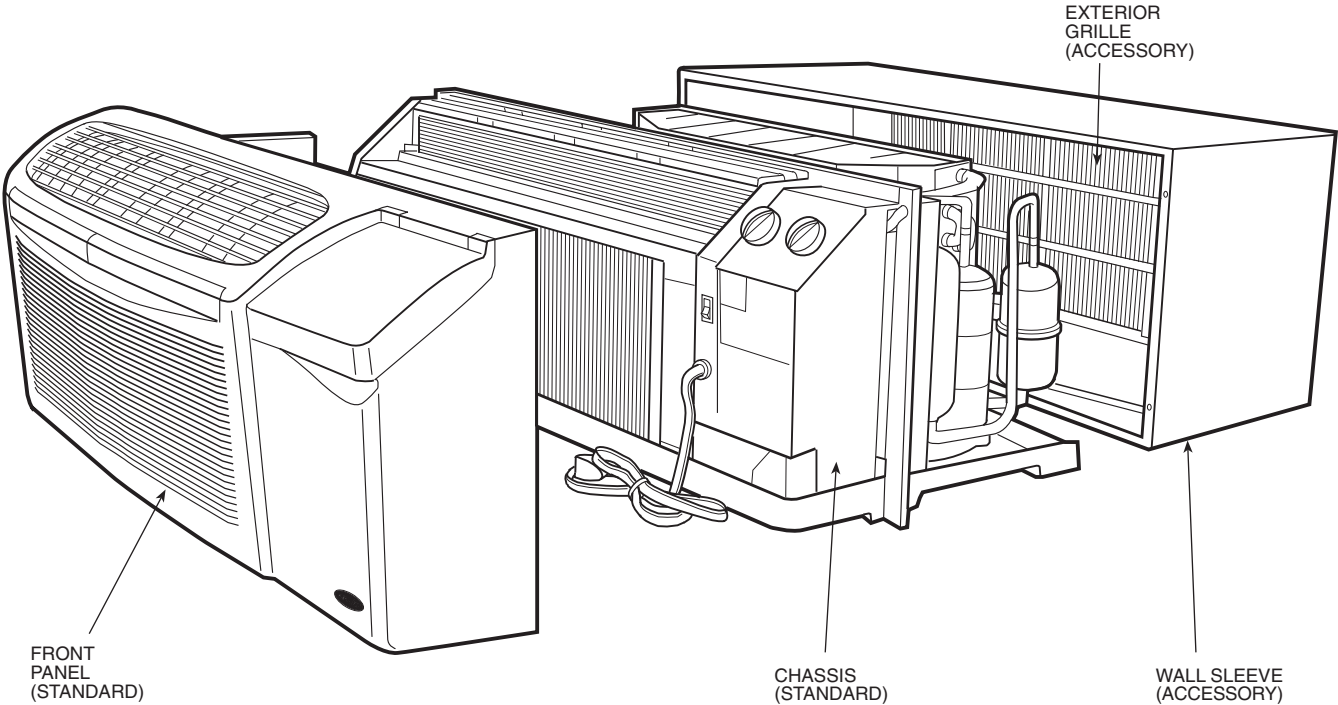
# ORDERING DATA

For immediate assistance, call 1-800-827-7435 or contact your local Carrier dealer.

Standard 52C Unit

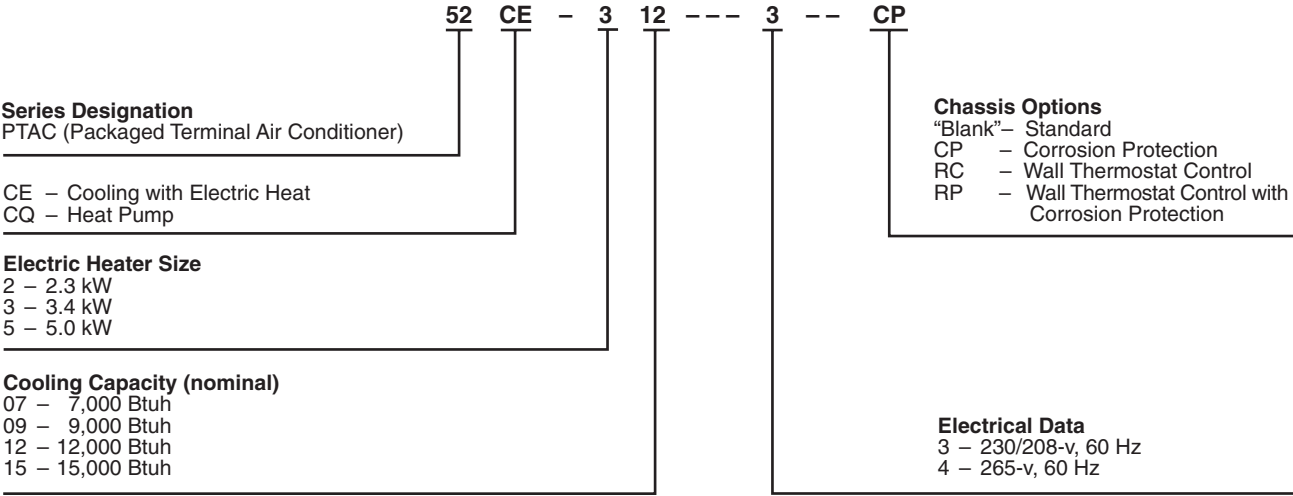
- Chassis with front panel
- Electro-mechanical controls
- Cord-connected chassis for 230/208V and 265V units

Lead-time: Many models are in stock for immediate delivery; call for lead-times.



Standard 52C Unit

## PRODUCT CATALOG NUMBER



## FACTORY-INSTALLED OPTIONS

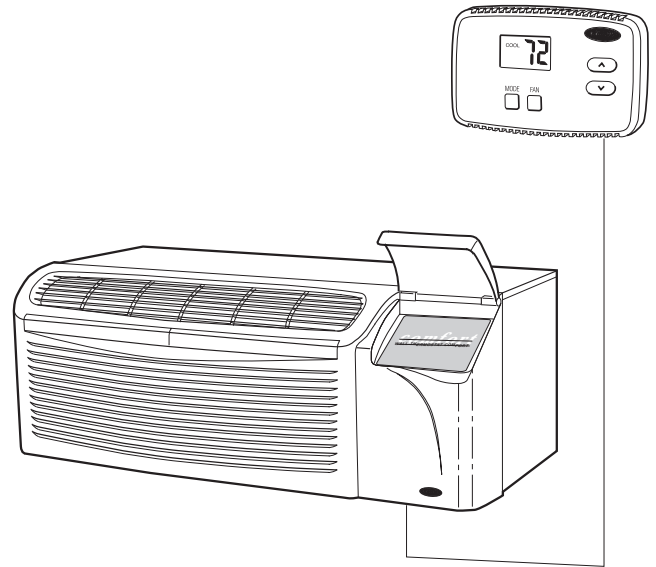
### Wall Thermostat Control (RC,RP)

Carrier's wall thermostat control option includes:

- a standard chassis with front panel
- factory-installed low voltage controls for remote thermostat operation

A wall thermostat must be ordered separately.

NOTE: A heat/cool or heat pump thermostat is available for each application. Be sure to connect reversing valve wiring to the O connection of the thermostat for heat pump applications.



### Corrosion Protection (CP,RP)

To protect against the corrosive effects of a seacoast environment, this option includes:

- a standard chassis with front panel
- special protections consisting of:
  - painted control box and unit partitions
  - pre-coated aluminum coils with copper tubing
  - stainless steel tube sheets (outdoor coil)
  - totally enclosed fan motor with moisture-resistant windings

NOTE: All installations within one mile of the sea coast or other corrosive environment must use Corrosion Protection (CP).



# ORDERING DATA (cont)

## FIELD-INSTALLED ACCESSORIES

### Wall Sleeves

It is recommended that a Carrier sleeve be used with a Carrier chassis.

Locating holes in the side panels allow easy fastening of the sleeve to wall openings. Refer to dimension drawings (pages 22 and 23) for typical wall installation and unit dimensions.

When installing any Carrier wall sleeve, note the following:

- If more than 4 in. of sleeve projects into the room or the wall is less than 2 in. thick, an accessory subbase must be used for support. Refer to the descriptions of the Accessory Subbases on page 18.
- For all applications with an accessory subbase, wall sleeve must extend 3 $\frac{1}{4}$  in. minimum into room and must be 3 $\frac{1}{4}$  in. minimum to 5 $\frac{1}{2}$  in. maximum above floor (including carpeting).
- All Carrier's sleeves are self pitching and must be mounted **level** in all directions.
- The sleeve should be caulked on all sides, including both inside and outside the building.

### Weather Last™ Wall Sleeve

Part No.: WALL-SLEEVE-1PK

Part No.: WALL-SLEEVE-9PK

The Carrier accessory wall sleeve is made from a molded polymer that is designed for strength and durability. This material has excellent corrosion resistance and a **flammability rating of UL94-5V**. The polymer sleeve absorbs sound, provides better insulation than a metal sleeve, and offers years of protection against the elements.

The rib configuration on the sleeve bottom allows easy chassis removal and aids in drainage. **The sleeves are built with a pitch of  $\frac{1}{4}$  in. per foot. Wall sleeves must be installed level.** Overflow slots are in place to divert excess water during severe weather.

The alpine mist (a shade of beige) finish matches the front panel and blends in well with inside or outside decor. The sleeve surface is textured to prevent shine and hide scratches.

### Insulated Polymer Wall Sleeve

Part No.: SLEEVE-INSUL-1PK

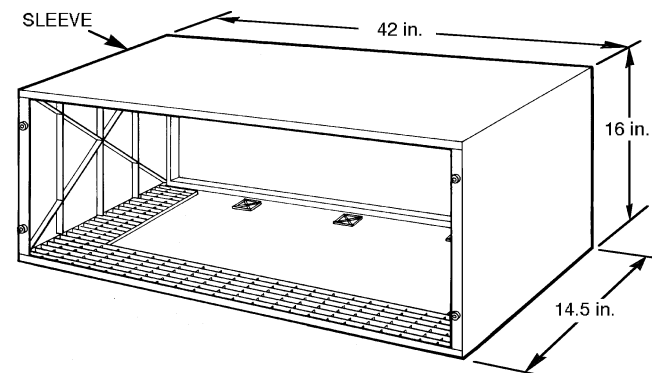
Insulated polymer wall sleeves combine all of the above features with the addition of factory-installed insulation. The insulation helps to reduce heat loss, save energy and provides better sound absorption over the non-insulated sleeve.

### Insulated Metal Wall Sleeves

Part No.: SLEEVE-STEEL-1PK

Part No.: SLEEVE-EXT24-1PK

Carrier's new metal wall sleeves are available in a variety of sizes for most applications and difficult installations. All metal wall sleeves come with factory-installed closed cell insulation, designed to minimize heat loss and reduce outdoor noise transmissions into the room. In addition, the metal wall sleeve provides a flammability rating higher than UL94-5V.



**Corrosion-Protected Polymer Sleeve**

## OUTDOOR GRILLES

Carrier recommends only the use of Carrier-supplied grilles for use on the 52C series units. However, the architectural designs of a building may dictate the use of special or oversized grilles and/or louvers. Special louvers or any special architectural treatment of the building façade that may restrict free circulation of condenser airflow should be referred to Carrier Corporation for evaluation and approval.

### Aluminum Architectural Outdoor Grilles (Louvered)

Part No.: GRILLE-ALU-CLEAR (anodized aluminum)

Part No.: GRILLE-ALU-WHITE

Part No.: GRILLE-ALU-BEIGE

Part No.: GRILLE-ALU-ALPIN (color matches Carrier wall sleeve)

Part No.: GRILLE-ALU-BRONZ

Part No.: GRILLE-ALU-MBRNZ

Part No.: GRILLE-ALU-BROWN

Part No.: GRILLE-ALU-LGREY

Part No.: GRILLE-ALU-SGREY

Part No.: GRILLE-ALU-PEACH

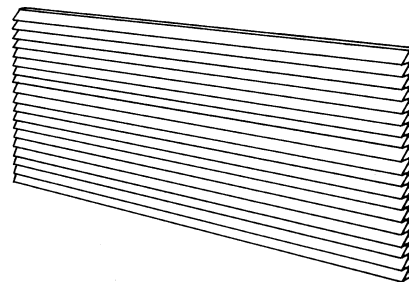
Part No.: GRILLE-ALU-MELON

Part No.: GRILLE-ALU-RDBRK

Part No.: GRILLE-ALU-BLUE

Part No.: GRILLE-ALU-GREEN

This premium line of decorative outdoor grilles will enhance the appearance of any building. The grilles are made of strong, durable, extruded, anodized aluminum and are designed to be mounted easily from inside the room. These elegant grilles have baked enamel finishes available in several colors. See inside of back cover for standard colors and color samples. For more information on custom colors and sizes, contact Reliable Products at 1-800-239-4621.



**Architectural Grille in Aluminum or Polymeric**

### Polymeric Architectural Outdoor Grilles (Louvered)

Part No.: GRILLE-PLA-BROWN

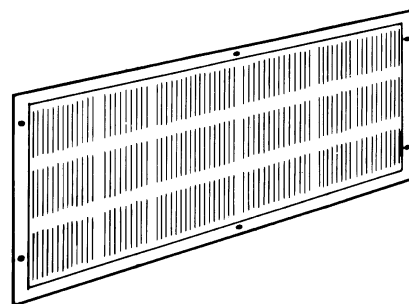
Part No.: GRILLE-PLA-BEIGE

This value line of polymeric outdoor grilles will blend attractively with most building exteriors. Mounted easily from inside the room, the one-piece, molded grille is designed for protection, enhanced appearance, and superior weather-resistance. The grille is made of durable polymer and has a colorfast, lightly-textured finish that blends well with most exterior finishes.

### Standard Outdoor Aluminum Grille

Part No.: GRILLE-ALU-STAMP

This cost-effective, one-piece standard grille is made from durable anodized aluminum. The grille is lightweight, has a clear finish, and is easy to install from inside the room.



**Standard Grille**



# ORDERING DATA (cont)

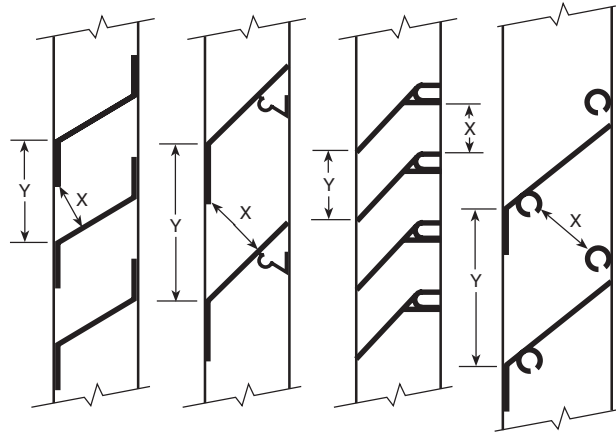
## Outdoor Grille Selection

**IMPORTANT:** If you wish to use a grille not made by Carrier for your Carrier unit(s), contact the Carrier Application Engineering Group at 1-800-894-6449.

The following guidelines must be followed in the initial selection of any alternate exterior grille or louver:

1. The louver must have a minimum of 65% free area. Free area is the minimum area of the opening in an air inlet or outlet in which air can pass. Free Area (%) =  $X/Y$ .
2. The louver should be attached to the wall sleeve in a manner that will prevent recirculation of condenser discharge air into the inlet. In most applications, baffles, splitters, and/or gasket will be required between the chassis tube end sheets and the louver to prevent air recirculation.

The above criteria must be followed, since a louver that is restrictive or allows recirculation will result in a reduction of the unit's capacity and efficiency and will ultimately shorten the compressor life.



**Louver Dimensional Reference**

### Sample Calculations

$$\text{Free Area (\%)} = \frac{x}{y} \times 100$$

$$x = 1''$$

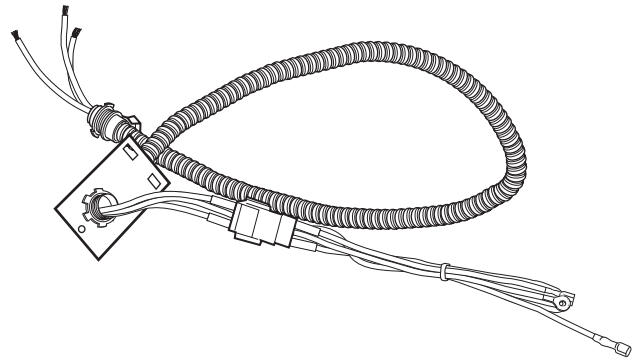
$$y = 1.5''$$

$$\text{F.A. (\%)} = \frac{1}{1.5} \times 100 = 66.7\%$$

## Hardwire Kit

Part No.: HARDWIRE-KIT-1PK

This accessory hardwire kit provides a permanent connection to the unit. Electrical hard wiring is required when NEC (National Electrical Code) or local codes restrict the use of power cord and plug connections. The hardwire kit mounts on the front right side of the unit and comes with 36 inches of flexible steel conduit and a molex connector for easy connect/disconnect.



**Hardwire Kit**

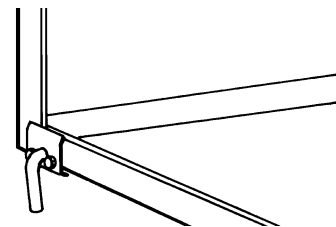
## Condensate Drain Kit

Part No.: DRAIN-KIT-4PK

This universal drain kit may be used internally or externally to route condensate to a drainage system. It can be field-installed on any Carrier wall sleeve.

Although Carrier's units are designed to dissipate all the condensate generated during normal cooling, there may be times when abnormal conditions cause more condensate than the unit can dissipate. If condensate that drips from the wall sleeve is objectionable, this internal/external drain kit should be installed.

The drain kit may be attached to the exterior right or left side of the wall sleeve for external draining or may be mounted to the room side of the wall sleeve for internal draining.



**Drain Kit**

# ORDERING DATA (cont)

## Subbase

Part No.: SUBBASE-NON-ELEC

Part No.: SUBBASE-230V-15A

Part No.: SUBBASE-230V-20A

Part No.: SUBBASE-230V-30A

Part No.: SUBBASE-265V-15A

Part No.: SUBBASE-265V-20A

Part No.: SUBBASE-265V-30A

Part No.: SUBBASE-HARDWIRE

This decorative subbase supports the unit and is available in three basic models: non-electrical, electrical, hardwired.

A subbase is required for installations where the wall sleeve extends 4 or more inches into the room or the wall is less than 2 in. thick. The minimum clearance between the bottom of the sleeve and the floor is 3<sup>1</sup>/<sub>4</sub> in., and the maximum clearance is 5<sup>1</sup>/<sub>2</sub> inches. The subbase assembly comes with two leveling legs.

**IMPORTANT:** All standard cord-connected 265 V PTAC units will require a field-installed electrical subbase accessory.

All subbase models mount to the wall sleeve and come with adjustable legs and side skirting to provide a finished appearance.

### *Non-electrical subbase*

The easy to install, non-electrical subbase does not have a receptacle and requires no wiring.

### *Electrical subbase*

The electrical subbase has a factory-installed electrical junction box containing a receptacle for corded packaged terminal air conditioner (PTAC) units. The electrical subbase series offers models from 230V-15 amp up to 265V-30 amp. Knockouts are provided for power source connections.

### *Hardwired subbase*

The hardwired electrical subbase has a factory-installed junction box containing 19 in. of flexible conduit and all mating connections for easy assembly to (PTAC) units. Knockouts are provided for power source connections.

## Subbase Fuse Kit

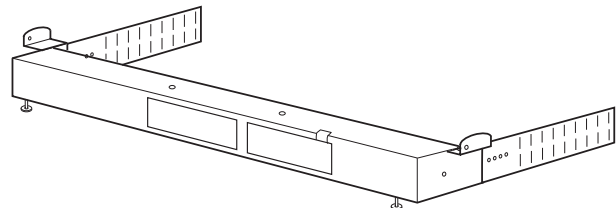
Part No.: SUBBASE-FUSE-15A

Part No.: SUBBASE-FUSE-20A

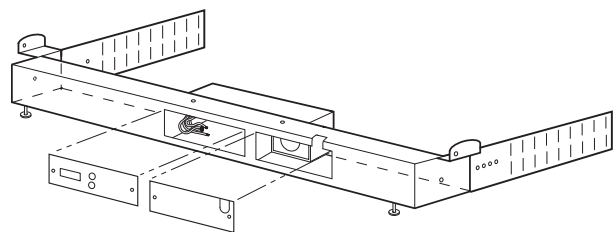
Part No.: SUBBASE-FUSE-30A

The fuse kit provides in-line overcurrent protection at the unit when required by NEC (National Electric Code) or local codes.

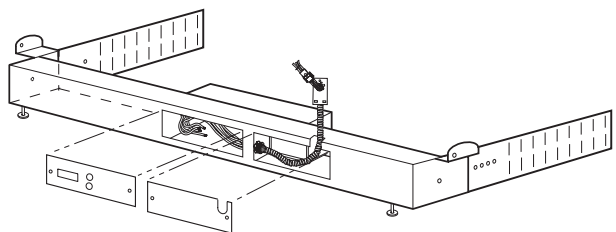
**IMPORTANT:** The Fuse Kit can only be used with the electrical or hardwired subbase.



**Non-Electrical Subbase Assembly**



**Electrical Subbase Assembly**



**Hardwired Subbase Assembly**

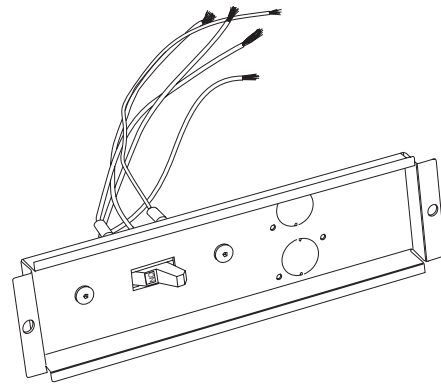


**Subbase Fuse Kit**

## Subbase Power Disconnect Switch

Part No.: SUBBASE-SWITCH

The subbase power disconnect switch provides a recessed power disconnect for the PTAC unit when required by NEC or local codes. This accessory is used with the electrical or hardwired subbase.

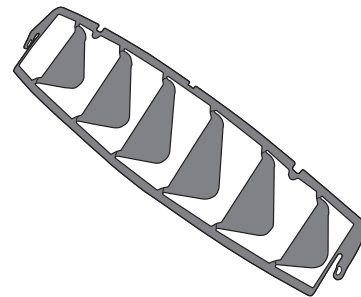


**Power Disconnect Switch Assembly**

## Bi-directional Air Deflector

Part No.: DEFLECTOR-1PK

Carrier's exclusive lateral air deflector allows discharge air to be directed toward any location in a room. This field-installed accessory is equipped with independently adjustable louvers to enhance air circulation. Lateral air deflectors are recommended for units mounted in a corner or off-center in a room.



## Lateral Duct Kit

Part No.: LATERAL-DUCT (Adapter Plenum and Extension)

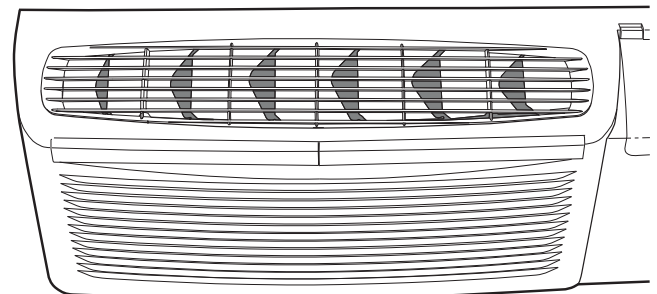
The accessory lateral duct kit allows one unit to heat or cool two rooms. The kit provides substantial savings for apartments, hotel suites, and office suites by eliminating the need for separate units for every room. The amount of air that can be diverted to an adjoining room is adjustable from 20 to 30 percent.

The lateral duct kit consists of two main components, the plenum and the extension duct. The kit mounts to the wall sleeve and allows either right or left side ducting. Consider the following when designing a ducted application.

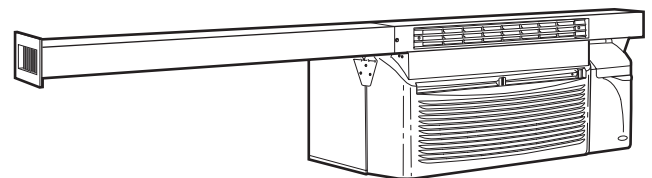
- The maximum extension of the duct length is 4 feet.
- The duct run must be straight and horizontal; no bends or turns.
- The minimum recommended clearance between the unit and the adjoining room wall is 6 inches.
- You must provide for return air from the adjoining room.
- Carrier 52C units are not qualified for use with any other ducting scheme.

See page 24 for more information.

NOTE: Lateral Duct Kit includes wall register for duct extension.



**Accessory Air Deflector**

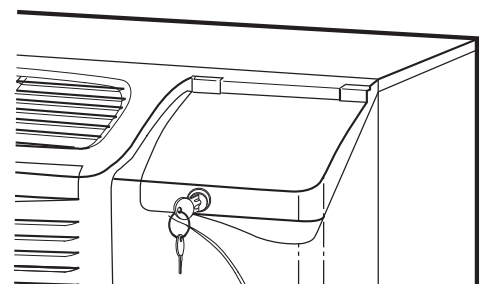


**Lateral Duct Kit**

## Security Door Kit

Part No.: SECURITY-DOOR

This key-locking security door kit prevents unauthorized access to the unit's heating and cooling controls and prevents tampering with units in public locations and institutions. This field-installed accessory includes two matching keys and fits all Carrier 52C models. Keys are common to all Security Door kits.



**Security Door Kit**

# ORDERING DATA (cont)

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## Manual Changeover Wall Thermostat

Part No.: HH01AD045 (for heat/cool and heat pump models)

This manual changeover wall thermostat provides a reliable and consistent level of occupant temperature control for both heat pumps and heating/cooling units. The thermostat consists of a conventional vented cover and a coiled bimetal element. It is used only on wall thermostat control (RC,RP) models.



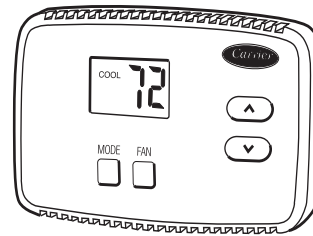
**Manual Thermostat**

## Non-Programmable Thermostat

Part No.: TSTATCCBPC01-B (for heat/cool models)

Part No.: TSTATCCBPH01-B (for heat pump models)

This low-voltage, easy-to-use non-programmable thermostat maintains separate heating and cooling set points to provide maximum comfort. This thermostat can only be used with wall thermostat (RC,RP) PTAC units.



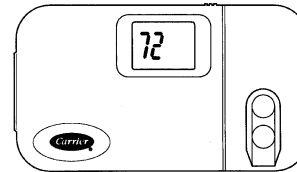
**Non-Programmable Thermostat**

## Digital Programmable Thermostat

Part No.: TSTATCCPAC01-B (for heat/cool models)

Part No.: TSTATCCPHP01-B (for heat pump models)

This microcomputer-controlled, 7-day programmable wall thermostat has enhanced features that provide automatic control for both heat pumps and heating/cooling units. It is used only on wall thermostat control (RC,RP) models.



**Typical Programmable Thermostat**

## Wall Thermostat Interface Retrofit Kit

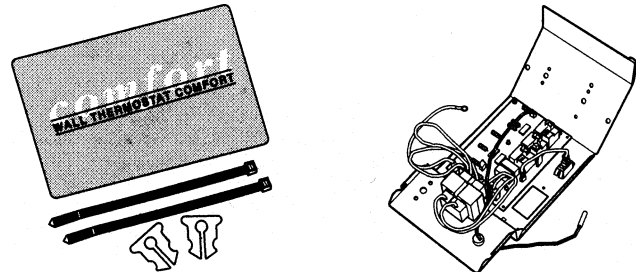
Part No.: RC-FIELDKIT230HC

Part No.: RC-FIELDKIT230HP

Part No.: RC-FIELDKIT265HC

Part No.: RC-FIELDKIT265HP

The Wall Thermostat Interface Retrofit Kit allows PTAC units with standard controls to be field converted for use with wall thermostat controls.

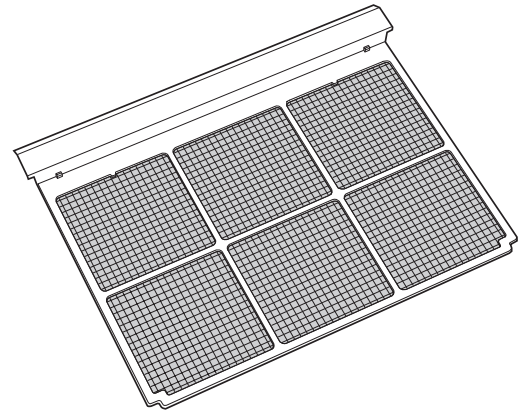


**Wall Thermostat Interface Retrofit Kit**

## Replacement Filters

Part No.: AIR-FILTER-10PK

The Carrier 52C model replacement air filters come in packages of 10. The filters save energy by preventing the evaporator coils from being plugged with dirt and lint. These economical and sturdy filters are interchangeable and may be washed, vacuumed, and reused.



**Easily Replaceable Filters**

## Energy Management Kit

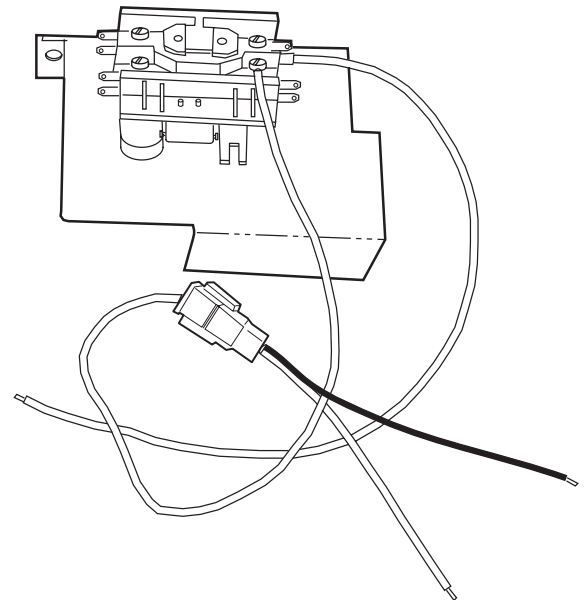
Part No.: EM-KIT

This field-installed accessory kit allows individual units to be turned on and off from a remote location.

The kit incorporates Carrier's Freeze Guard protection that prevents rooms from freezing during extreme or extended cold periods. Under these conditions, the Freeze Guard automatically disables front desk control and allows the unit to maintain a temperature of at least 50 F in the room. When the room reaches 65 F, the Freeze Guard feature returns the unit control to the front desk.

This kit interfaces to most energy management systems. When installed in locations other than the front desk, the kit can control unit operation by receiving signals from field-supplied devices such as motion sensors or heat sensing detectors.

Control devices connected to the Energy Management Kit must have normally open sets of contacts (when the switch is open, the unit operates). A 24-volt transformer must be field supplied and connected to the Energy Management Kit. (See typical wiring diagram on page 35.)



**Energy Management Kit**

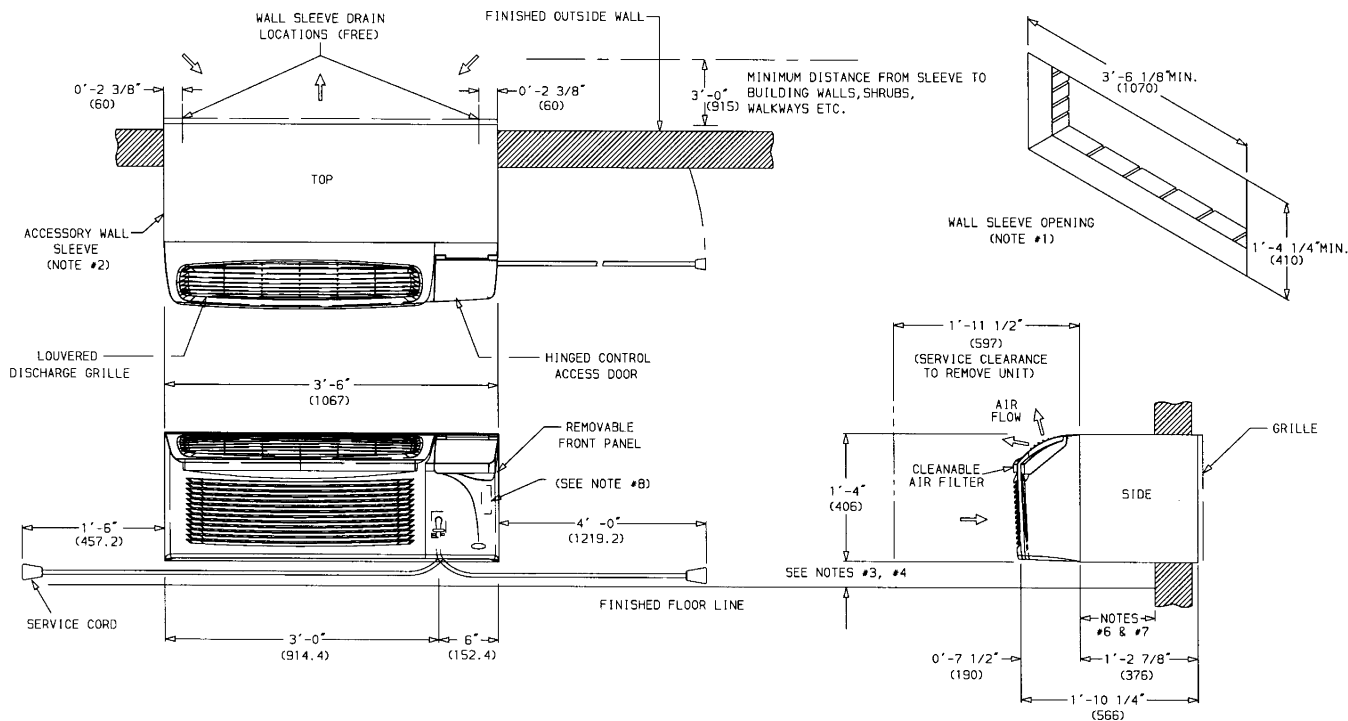
# DIMENSION DRAWINGS AND INSTALLATION DATA — NEW CONSTRUCTION

## TYPICAL WALL INSTALLATION

Proper building practices must be used when constructing a wall opening to support a PTAC wall sleeve and chassis.

If practices are unknown, consult your local architect or building contractor.

Installed wall sleeve must be level from side to side and front to back.



### NOTES:

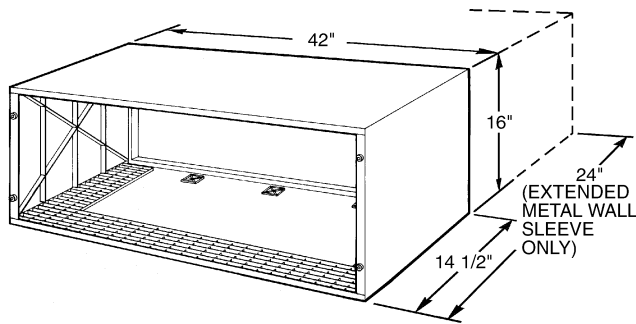
1. Minimum opening sizes apply to all wall openings.
2. Proper building practices must be used when constructing a wall opening to support a PTAC wall sleeve and chassis, if practices are unknown consult your local architect or building contractor.
3. Installed wall sleeve must be level from side to side and front to back.
4. For all applications with an accessory subbase, wall sleeve must extend into room 3 1/4-in. (83) minimum and 3 1/4-in. (83) minimum from floor.

5. Dimensions in parentheses are in millimeters.
6. For all applications with an accessory lateral duct, sleeve must extend into the room 3-in. (76.2) minimum. In applications where the sleeve will not extend a minimum of 3-in., the lateral duct mounting brackets will need to be mounted on the sleeve prior to installation to the wall.
7. If wall sleeve extends into room more than 4-in., an accessory subbase or field fabricated front support should be used.
8. Remote control models 52 "C" series "RC" and "RP" units use low voltage connections (24 volt).

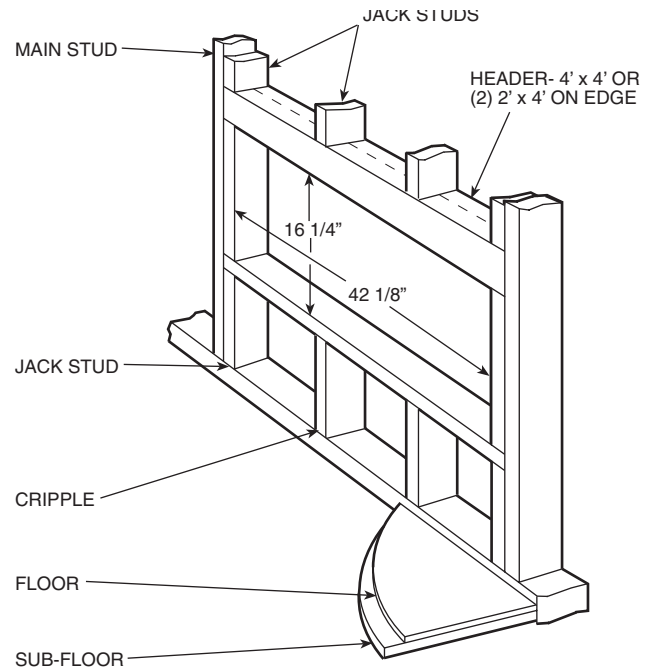
### 52C Dimension Drawing



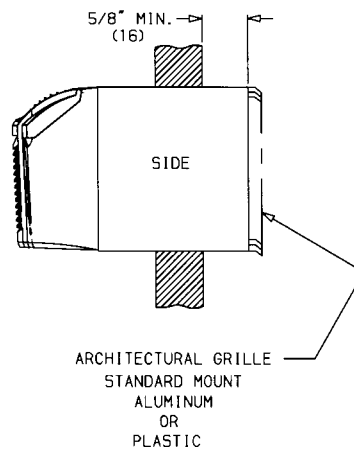
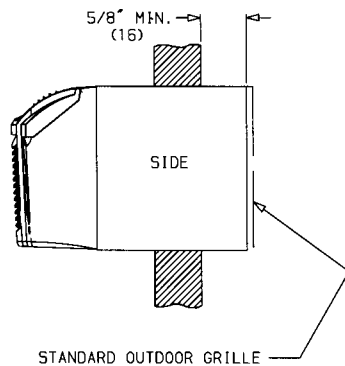
# WALL SLEEVE MOUNTING DIMENSIONS FOR STANDARD AND ACCESSORY GRILLES



Standard Polymer Non-Insulated Wall Sleeve  
 Standard Polymer Insulated Wall Sleeve  
 Standard Metal Insulated Wall Sleeve  
 Extended Metal Insulated Wall Sleeve



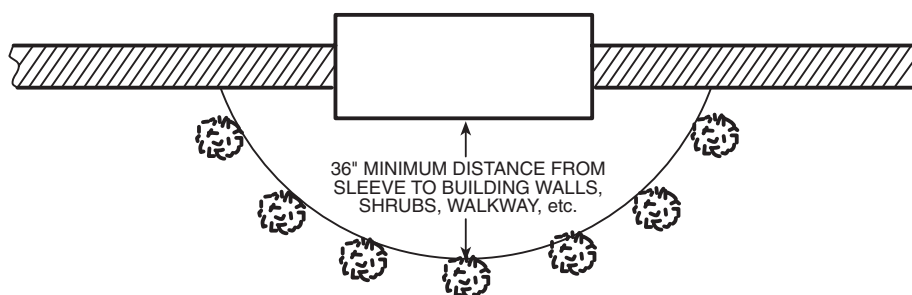
**Framing and Minimum Wall Sleeve Opening**



**Wall Sleeve Mounting (All Models)**

# DIMENSION DRAWINGS AND INSTALLATION DATA — NEW CONSTRUCTION (cont)

## MINIMUM CLEARANCE FOR OUTDOOR DISCHARGE AIR

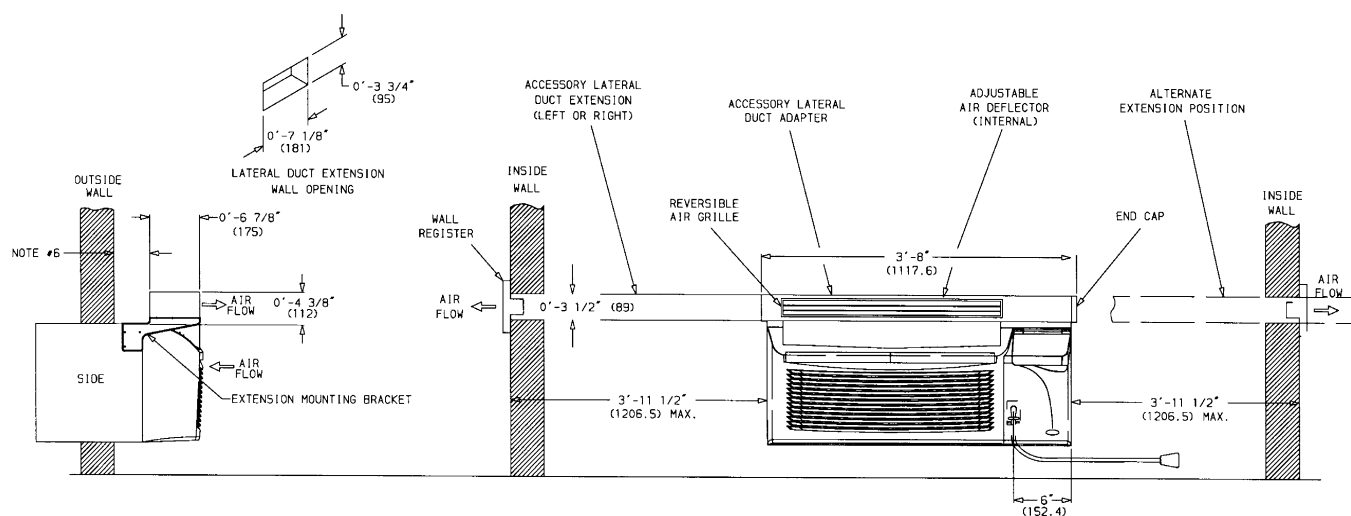


**52C Outdoor Discharge Air Circulation**

### **⚠ WARNING**

Blocking outdoor discharge air could cause premature failure of unit.

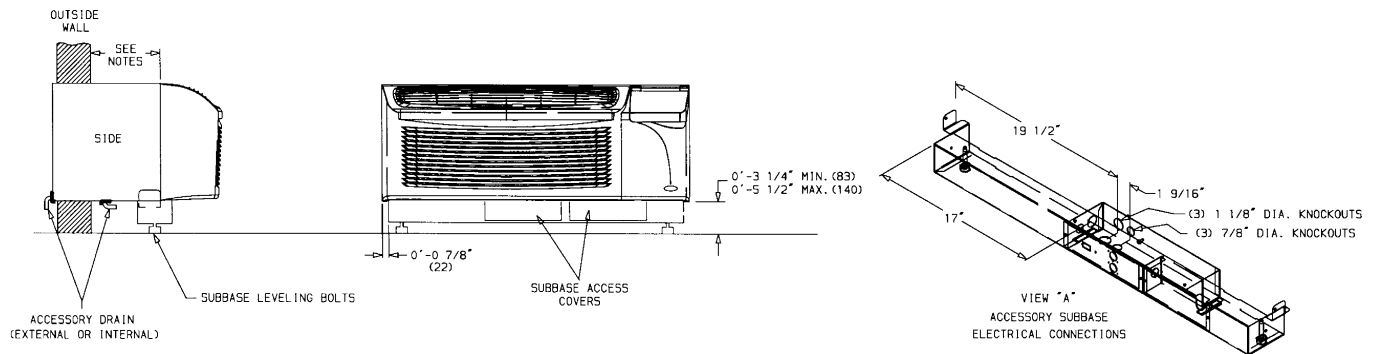
## TYPICAL LATERAL DUCT INSTALLATION



NOTE: For all applications with an accessory lateral duct, sleeve must extend into the room a minimum of 3-inches. In applications where the sleeve will not extend a minimum of 3-in., the lateral duct mounting brackets will need to be mounted on the sleeve prior to installation to the wall.

**52C Lateral Duct**

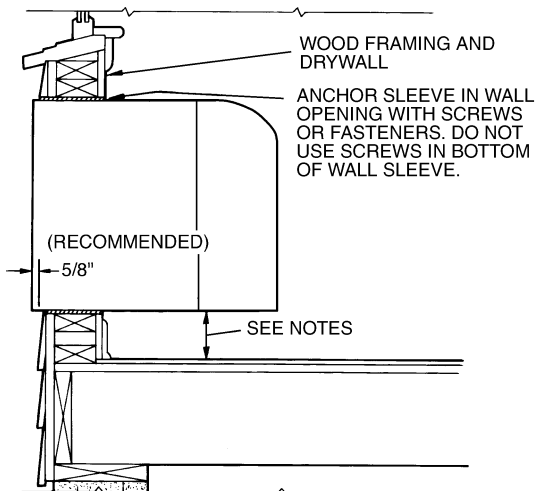
## 52C WITH SUBBASE



### NOTES:

- Accessory subbase is required for applications where:
    - Wall sleeve extends 4 or more inches into the room.
    - Wall thickness is less than 2 inches.
    - All 265 v cord connected applications.
  - For all applications with an accessory subbase:
    - Wall sleeve must extend 4 in. minimum into the room and 3 1/4 in. minimum above the floor.
    - Subbase height is adjustable from 3 1/4 in. minimum to 5 1/2 in. maximum above floor (including carpeting).
- Refer to wall sleeve installation instructions.

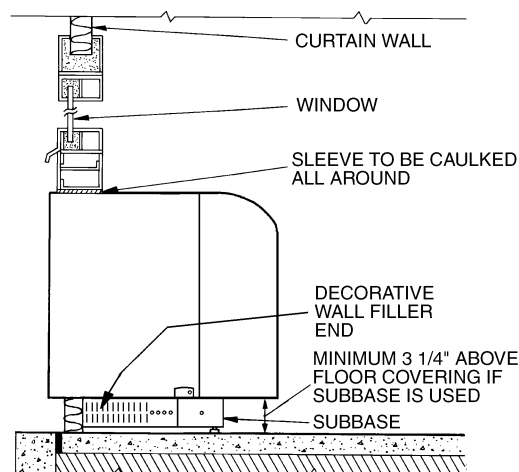
## TYPICAL WALL AND DEEP WALL INSTALLATION



### NOTES:

- Sleeve may be flush mounted to floor, but front panel may have to be notched to accommodate service cord.
- If more than 4 in. of sleeve projects into room, an accessory subbase must be used for support.
- For walls 2 in. thick or less, an accessory subbase must be used for support.
- Caulk around sleeve on both indoor and outdoor sides.

### Typical Wall Sleeve Installation



### Typical Curtain Wall Installation (All Models)

# PRODUCT DATA

## PERFORMANCE AND ELECTRICAL DATA

MODEL 52CQ (230/208-1-60)

| MODEL<br>NUMBER<br>52CQ | CAPACITY* (Btuh) |               |               | HEATER<br>kW | EER       | COP†    | VOLTAGE<br>RANGE<br>(Volts) | AMPS    |           | WATTS     |           |
|-------------------------|------------------|---------------|---------------|--------------|-----------|---------|-----------------------------|---------|-----------|-----------|-----------|
|                         | Cooling          | Heating       |               |              |           |         |                             | Cooling | Heating** | Cooling   | Heating   |
|                         |                  | Rev. Cyc.     | Electric      |              |           |         |                             |         |           |           |           |
| 207---3                 | 7,000/ 6,900     | 6,100/ 6,000  | 7,800/ 6,400  | 2.3          | 11.1/11.1 | 3.1/3.1 | 187-253                     | 2.7/2.9 | 10.4/ 9.5 | 631/ 622  | 2393/1985 |
| 307---3                 | 7,000/ 6,900     | 6,100/ 6,000  | 11,600/ 9,700 | 3.4          | 11.1/11.1 | 3.1/3.1 |                             | 2.7/2.9 | 15.2/14.1 | 631/ 622  | 3493/2935 |
| 209---3                 | 9,000/ 8,900     | 7,900/ 7,800  | 7,800/ 6,400  | 2.3          | 10.7/10.7 | 3.1/3.1 |                             | 3.7/3.8 | 10.4/ 9.5 | 841/ 832  | 2393/1985 |
| 309---3                 | 9,000/ 8,900     | 7,900/ 7,800  | 11,600/ 9,700 | 3.4          | 10.7/10.7 | 3.1/3.1 |                             | 3.7/3.8 | 15.2/14.1 | 841/ 832  | 3493/2935 |
| 212---3                 | 12,000/11,900    | 10,800/10,700 | 7,800/ 6,400  | 2.3          | 10.1/10.1 | 3.0/3.0 |                             | 4.8/5.3 | 10.8/ 9.9 | 1188/1178 | 2470/2047 |
| 312---3                 | 12,000/11,900    | 10,800/10,700 | 11,600/ 9,700 | 3.4          | 10.1/10.1 | 3.0/3.0 |                             | 4.8/5.3 | 15.6/14.5 | 1188/1178 | 3570/2997 |
| 512---3                 | 12,000/11,900    | 10,800/10,700 | 17,000/13,600 | 5.0          | 10.1/10.1 | 3.0/3.0 |                             | 4.8/5.3 | 22.5/20.0 | 1188/1178 | 5170/4147 |
| 215---3                 | 15,000/14,800    | 14,500/14,300 | 7,800/ 6,400  | 2.3          | 9.4/ 9.4  | 2.9/2.9 |                             | 6.8/7.6 | 10.9/10.0 | 1596/1575 | 2517/2117 |
| 315---3                 | 15,000/14,800    | 14,500/14,300 | 11,600/ 9,700 | 3.4          | 9.4/ 9.4  | 2.9/2.9 |                             | 6.8/7.6 | 15.7/14.6 | 1596/1575 | 3617/3067 |
| 515---3                 | 15,000/14,800    | 14,500/14,300 | 17,000/13,600 | 5.0          | 9.4/ 9.4  | 2.9/2.9 |                             | 6.8/7.6 | 22.6/20.1 | 1596/1575 | 5217/4217 |

| MODEL<br>NUMBER<br>52CQ | POWER<br>FACTOR<br>(%) | FAN MOTOR |                   |                       | MAX FUSE<br>SIZE<br>(Amps) | MIN.<br>CIRCUIT<br>AMPS | RECEP-<br>TACLE<br>TYPE | DEHUMIDIFI-<br>CATION<br>(Pints/Hr) | SENSIBLE<br>HEAT<br>FACTOR | R-22<br>CHARGE<br>(oz) | APPROX.<br>CHASSIS<br>SHIP WT.<br>(lb) |
|-------------------------|------------------------|-----------|-------------------|-----------------------|----------------------------|-------------------------|-------------------------|-------------------------------------|----------------------------|------------------------|--|
|                         |                        | Watts     | Full Load<br>Amps | Indoor CFM<br>LO/HI†† |                            |                         |                         |                                     |                            |                        |  |
| 207---3                 | 100                    | 0.075     | 0.44              | 220/260               | 15                         | 13.0                    | A                       | 1.5                                 | 0.78                       | 24                     | 125                                    |
| 307---3                 |                        |           |                   |                       | 20                         | 19.0                    | B                       |                                     |                            |                        |  |
| 209---3                 | 99                     | 0.075     | 0.44              | 220/260               | 15                         | 13.0                    | A                       | 2.4                                 | 0.73                       | 24                     | 125                                    |
| 309---3                 |                        |           |                   |                       | 20                         | 19.0                    | B                       |                                     |                            |                        |  |
| 212---3                 | 99                     | 0.125     | 0.75              | 270/350               | 15                         | 13.3                    | A                       | 3.4                                 | 0.71                       | 34                     | 140                                    |
| 312---3                 |                        |           |                   |                       | 20                         | 19.3                    | B                       |                                     |                            |                        |  |
| 512---3                 |                        |           |                   |                       | 30                         | 27.9                    | C                       |                                     |                            |                        |  |
| 215---3                 | 99                     | 0.25      | 0.91              | 290/330               | 15                         | 13.4                    | A                       | 5.2                                 | 0.65                       | 35                     | 150                                    |
| 315---3                 |                        |           |                   |                       | 20                         | 19.4                    | B                       |                                     |                            |                        |  |
| 515---3                 |                        |           |                   |                       | 30                         | 28.0                    | C                       |                                     |                            |                        |  |

### LEGEND

EER — Energy Efficiency Ratio

\*Rated in accordance with ARI Standard 380-93.




†Coefficient of Performance (COP) at 47 F outdoor ambient temperature.

\*\*Electric resistance heater power and fan motor power.

††Fan motor indoor CFM (LO/HI) shown for 230-1-60 units.



### RECEPTACLES AND FUSE TYPES

| UNIT NAMEPLATE VOLTAGE                            | 230/208   |   |   |
|---|---|---|---|
| OUTLET RATED VOLTS/AMPS                           | 250/15  | 250/20  | 250/30  |
| OUTLET BLADE CONFIGURATION                        |  A |  B |  C |
| NEMA CONFIGURATION                                | 6-15R   | 6-20R   | 6-30R   |
| TIME DELAY FUSE OR HACR<br>CIRCUIT BREAKER (AMPS) | 15  | 20*   | 30  |
| HEATER (KILOWATTS)                                | 2.3   | 3.4   | 5.0   |

### LEGEND

HACR — Heating, Air Conditioning, and Refrigeration

NEMA — National Electrical Manufacturers Association

\*May be used for 15-amp applications if fused for 15 amps.

## PERFORMANCE AND ELECTRICAL DATA

MODEL 52CQ (265-1-60)

| MODEL<br>NUMBER<br>52CQ | CAPACITY* (Btuh) |            |          | HEATER<br>kW | EER  | COP† | VOLT<br>RANGE | AMPS    |           | WATTS   |         |
|-------------------------|------------------|------------|----------|--------------|------|------|---------------|---------|-----------|---------|---------|
|                         | Cooling          | Heating    |          |              |      |      |               | Cooling | Heating** | Cooling | Heating |
|                         |                  | Rev. Cycle | Electric |              |      |      |               |         |           |         |         |
| 207---4                 | 7,000            | 6,100      | 7,800    | 2.3          | 11.1 | 3.1  | 239-292       | 2.4     | 9.2       | 631     | 2396    |
| 307---4                 | 7,000            | 6,100      | 11,600   | 3.4          | 11.1 | 3.1  |               | 2.4     | 13.3      | 631     | 3496    |
| 209---4                 | 8,900            | 7,900      | 7,800    | 2.3          | 10.7 | 3.1  |               | 3.1     | 9.2       | 832     | 2396    |
| 309---4                 | 8,900            | 7,900      | 11,600   | 3.4          | 10.7 | 3.1  |               | 3.1     | 13.3      | 832     | 3496    |
| 212---4                 | 12,000           | 10,800     | 7,800    | 2.3          | 10.1 | 3.0  |               | 4.2     | 9.4       | 1188    | 2470    |
| 312---4                 | 12,000           | 10,800     | 11,600   | 3.4          | 10.1 | 3.0  |               | 4.2     | 13.5      | 1188    | 3570    |
| 512---4                 | 12,000           | 10,800     | 17,000   | 5.0          | 10.1 | 3.0  |               | 4.2     | 19.6      | 1188    | 5170    |
| 215---4                 | 15,000           | 14,700     | 7,800    | 2.3          | 9.4  | 2.9  |               | 6.0     | 9.7       | 1596    | 2517    |
| 315---4                 | 15,000           | 14,700     | 11,600   | 3.4          | 9.4  | 2.9  |               | 6.0     | 13.8      | 1596    | 3617    |
| 515---4                 | 15,000           | 14,700     | 17,000   | 5.0          | 9.4  | 2.9  |               | 6.0     | 19.9      | 1596    | 5217    |

| MODEL<br>NUMBER<br>52CQ | POWER<br>FACTOR<br>% | FAN MOTOR  |                      |                        | MAX. FUSE<br>SIZE<br>(Amps) | MIN.<br>CIRCUIT<br>AMPS | RECEP-<br>TACLE<br>TYPE†† | R-22<br>CHARGE<br>(oz) | DEHUMIDI-<br>FICATION<br>(Pints/Hr) | SENSIBLE<br>HEAT<br>FACTOR | APPROX.<br>CHASSIS<br>SHIP WT<br>(lb) |
|-------------------------|----------------------|------------|----------------------|------------------------|-----------------------------|-------------------------|---------------------------|------------------------|-------------------------------------|----------------------------|---------------------------------------|
|                         |                      | Horsepower | Full<br>Load<br>Amps | Indoor<br>CFM<br>LO/HI |                             |                         |                           |                        |                                     |                            |                                       |
| 207---4                 | 97                   | 0.075      | 0.46                 | 220/260                | 15                          | 11.3                    | A                         | 26                     | 1.5                                 | 0.78                       | 125                                   |
| 307---4                 |                      |            |                      |                        | 20                          | 16.5                    | B                         |                        |                                     |                            |                                       |
| 209---4                 | 97                   | 0.075      | 0.46                 | 220/260                | 15                          | 11.3                    | A                         | 24                     | 2.4                                 | 0.73                       | 125                                   |
| 309---4                 |                      |            |                      |                        | 20                          | 16.5                    | B                         |                        |                                     |                            |                                       |
| 212---4                 | 99                   | 0.125      | 0.71                 | 270/340                | 15                          | 11.6                    | A                         | 34                     | 3.4                                 | 0.71                       | 140                                   |
| 312---4                 |                      |            |                      |                        | 20                          | 16.7                    | B                         |                        |                                     |                            |                                       |
| 512---4                 |                      |            |                      |                        | 25                          | 24.3                    | C                         |                        |                                     |                            |                                       |
| 215---4                 | 95                   | 0.25       | 1.00                 | 290/350                | 15                          | 11.9                    | A                         | 36                     | 5.2                                 | 0.65                       | 150                                   |
| 315---4                 |                      |            |                      |                        | 20                          | 17.0                    | B                         |                        |                                     |                            |                                       |
| 515---4                 |                      |            |                      |                        | 25                          | 24.6                    | C                         |                        |                                     |                            |                                       |

### LEGEND

**EER** — Energy Efficiency Ratio

\*Rated in accordance with ARI Standard 380-93.




†Coefficient of Performance (COP) at 47 F outdoor ambient temperature.

\*\*Electric resistance heater power and fan motor power.

††All 265-v units require the Accessory Hardwire Subbase Kit.



## RECEPTACLES AND FUSE TYPES

| UNIT NAMEPLATE VOLTAGE                            | 265   |   |   |
|---|---|---|---|
| OUTLET RATED VOLTS/AMPS                           | 277/15  | 277/20  | 277/30  |
| OUTLET BLADE CONFIGURATION                        |  A |  B |  C |
| NEMA CONFIGURATION                                | 7-15R   | 7-20R   | 7-30R   |
| TIME DELAY FUSE OR HACR<br>CIRCUIT BREAKER (AMPS) | 15  | 20  | 30  |
| HEATER (KILOWATTS)                                | 2.3   | 3.4   | 5.0   |

### LEGEND

**HACR** — Heating, Air Conditioning, and Refrigeration

**NEMA** — National Electrical Manufacturers Association

# PRODUCT DATA (cont)

## PERFORMANCE AND ELECTRICAL DATA

MODEL 52CE (230/208-1-60)

| MODEL NUMBER<br>52CE | CAPACITY* (Btuh) |               | HEATER<br>kW | EER       | VOLTAGE<br>RANGE<br>(Volts) | AMPS    |           | WATTS     |           |
|----------------------|------------------|---------------|--------------|-----------|-----------------------------|---------|-----------|-----------|-----------|
|                      | Cooling          | Heating       |              |           |                             | Cooling | Heating†  | Cooling   | Heating   |
| 207---3              | 7,000/ 6,900     | 7,800/ 6,400  | 2.3          | 11.1/11.1 | 187-253                     | 2.7/2.9 | 10.4/ 9.5 | 631/ 622  | 2393/1985 |
| 307---3              | 7,000/ 6,900     | 11,600/ 9,700 | 3.4          | 11.1/11.1 |                             | 2.7/2.9 | 15.2/14.1 | 631/ 622  | 3493/2935 |
| 209---3              | 9,000/ 8,900     | 7,800/ 6,400  | 2.3          | 10.7/10.7 |                             | 3.7/3.8 | 10.4/ 9.5 | 841/ 832  | 2393/1985 |
| 309---3              | 9,000/ 8,900     | 11,600/ 9,700 | 3.4          | 10.7/10.7 |                             | 3.7/3.8 | 15.2/14.1 | 841/ 832  | 3493/2935 |
| 212---3              | 12,000/11,900    | 7,800/ 6,400  | 2.3          | 10.1/10.1 |                             | 4.8/5.3 | 10.8/ 9.9 | 1188/1178 | 2470/2047 |
| 312---3              | 12,000/11,900    | 11,600/ 9,700 | 3.4          | 10.1/10.1 |                             | 4.8/5.3 | 15.6/14.5 | 1188/1178 | 3570/2997 |
| 512---3              | 12,000/11,900    | 17,000/13,600 | 5.0          | 10.1/10.1 |                             | 4.8/5.3 | 22.5/20.0 | 1188/1178 | 5170/4147 |
| 215---3              | 15,000/14,800    | 7,800/ 6,400  | 2.3          | 9.4/ 9.4  |                             | 6.8/7.6 | 10.9/10.0 | 1596/1575 | 2517/2117 |
| 315---3              | 15,000/14,800    | 11,600/ 9,700 | 3.4          | 9.4/ 9.4  |                             | 6.8/7.6 | 15.7/14.6 | 1596/1575 | 3617/3067 |
| 515---3              | 15,000/14,800    | 17,000/13,600 | 5.0          | 9.4/ 9.4  |                             | 6.8/7.6 | 22.6/20.1 | 1596/1575 | 5217/4217 |

| MODEL NUMBER<br>52CE | POWER FACTOR (%) | FAN MOTOR  |                |                    | MAX. FUSE SIZE (Amps) | MIN. CIRCUIT AMPS | RECEPTACLE TYPE | R-22 CHARGE (oz) | DEHUMIDIFICATION (Pints/Hr) | SENSIBLE HEAT FACTOR | APPROX. SHIP WT. (lb) |
|----------------------|------------------|------------|----------------|--------------------|-----------------------|-------------------|-----------------|------------------|-----------------------------|----------------------|-----------------------|
|                      |                  | Horsepower | Full Load Amps | Indoor CFM LO/HI** |                       |                   |                 |                  |                             |                      |                       |
| 207---3              | 100              | 0.075      | 0.44           | 220/260            | 15                    | 13.0              | A               | 24               | 1.5                         | 0.78                 | 125                   |
| 307---3              |                  |            |                |                    | 20                    | 19.0              | B               |                  |                             |                      |                       |
| 209---3              | 99               | 0.075      | 0.44           | 220/260            | 15                    | 13.0              | A               | 24               | 2.4                         | 0.73                 | 125                   |
| 309---3              |                  |            |                |                    | 20                    | 19.0              | B               |                  |                             |                      |                       |
| 212---3              | 99               | 0.125      | 0.75           | 270/350            | 15                    | 13.3              | A               | 34               | 3.4                         | 0.71                 | 140                   |
| 312---3              |                  |            |                |                    | 20                    | 19.3              | B               |                  |                             |                      |                       |
| 512---3              |                  |            |                |                    | 30                    | 27.9              | C               |                  |                             |                      |                       |
| 215---3              | 99               | 0.25       | 0.91           | 290/330            | 15                    | 13.4              | A               | 35               | 5.2                         | 0.65                 | 150                   |
| 315---3              |                  |            |                |                    | 20                    | 19.4              | B               |                  |                             |                      |                       |
| 515---3              |                  |            |                |                    | 30                    | 28.0              | C               |                  |                             |                      |                       |

### LEGEND

**EER** — Energy Efficiency Ratio




\*Rated in accordance with ARI Standard 310-93.

†Electric resistance heater power and fan motor power.

\*\*Fan motor indoor CFM (LO/HI) shown for 230-1-60 units.



## RECEPTACLES AND FUSE TYPES

| UNIT NAMEPLATE VOLTAGE                         | 230/208   |   |   |
|--|---|---|---|
| OUTLET RATED VOLTS/AMPS                        | 250/15  | 250/20  | 250/30  |
| OUTLET BLADE CONFIGURATION                     |  A |  B |  C |
| TIME DELAY FUSE OR HACR CIRCUIT BREAKER (AMPS) | 15  | 20*   | 30  |
| HEATER (KILOWATTS)                             | 2.3   | 3.4   | 5.0   |

### LEGEND

**HACR** — Heating, Air Conditioning, and Refrigeration  
**NEMA** — National Electrical Manufacturers Association

\*May be used for 15-amp applications if fused for 15 amps.

## PERFORMANCE AND ELECTRICAL DATA

MODEL 52CE (265-1-60)

| MODEL NUMBER<br>52CE | CAPACITY* (Btuh) |         | HEATER<br>kW | EER  | VOLTAGE<br>RANGE<br>(Volts) | AMPS    |          | WATTS   |         |
|----------------------|------------------|---------|--------------|------|-----------------------------|---------|----------|---------|---------|
|                      | Cooling          | Heating |              |      |                             | Cooling | Heating† | Cooling | Heating |
| 207---4              | 7,000            | 7,800   | 2.3          | 11.1 | 239-292                     | 2.4     | 9.2      | 631     | 2396    |
| 307---4              | 7,000            | 11,600  | 3.4          | 11.1 |                             | 2.4     | 13.3     | 631     | 3496    |
| 209---4              | 8,900            | 7,800   | 2.3          | 10.7 |                             | 3.1     | 9.2      | 832     | 2396    |
| 309---4              | 8,900            | 11,600  | 3.4          | 10.7 |                             | 3.1     | 13.3     | 832     | 3496    |
| 212---4              | 12,000           | 7,800   | 2.3          | 10.1 |                             | 4.2     | 9.4      | 1188    | 2470    |
| 312---4              | 12,000           | 11,600  | 3.4          | 10.1 |                             | 4.2     | 13.5     | 1188    | 3570    |
| 512---4              | 12,000           | 17,000  | 5.0          | 10.1 |                             | 4.2     | 19.6     | 1188    | 5170    |
| 215---4              | 15,000           | 7,800   | 2.3          | 9.4  |                             | 6.0     | 9.7      | 1596    | 2517    |
| 315---4              | 15,000           | 11,600  | 3.4          | 9.4  |                             | 6.0     | 13.8     | 1596    | 3617    |
| 515---4              | 15,000           | 17,000  | 5.0          | 9.4  |                             | 6.0     | 19.9     | 1596    | 5217    |

| MODEL NUMBER<br>52CE | POWER FACTOR<br>% | FAN MOTOR  |                |                  | MAX. FUSE SIZE<br>(Amps) | MIN. CIRCUIT AMPS | RECEP-TACLE TYPE** | R-22 CHARGE (oz) | DEHUMIDI-FICATION (Pints/Hr) | SENSIBLE HEAT FACTOR | APPROX. CHASSIS SHIP WT (lb) |
|----------------------|-------------------|------------|----------------|------------------|--------------------------|-------------------|--------------------|------------------|------------------------------|----------------------|------------------------------|
|                      |                   | Horsepower | Full Load Amps | Indoor CFM LO/HI |                          |                   |                    |                  |                              |                      |                              |
| 207---4              | 97                | 0.075      | 0.46           | 220/260          | 15                       | 11.3              | A                  | 26               | 1.5                          | 0.78                 | 125                          |
| 307---4              |                   |            |                |                  | 20                       | 16.5              | B                  |                  |                              |                      |                              |
| 209---4              | 97                | 0.075      | 0.46           | 220/260          | 15                       | 11.3              | A                  | 24               | 2.4                          | 0.73                 | 125                          |
| 309---4              |                   |            |                |                  | 20                       | 16.5              | B                  |                  |                              |                      |                              |
| 212---4              | 99                | 0.125      | 0.71           | 270/340          | 15                       | 11.6              | A                  | 34               | 3.4                          | 0.71                 | 140                          |
| 312---4              |                   |            |                |                  | 20                       | 16.7              | B                  |                  |                              |                      |                              |
| 512---4              |                   |            |                |                  | 25                       | 24.3              | C                  |                  |                              |                      |                              |
| 215---4              | 95                | 0.25       | 1.00           | 290/350          | 15                       | 11.9              | A                  | 36               | 5.2                          | 0.65                 | 150                          |
| 315---4              |                   |            |                |                  | 20                       | 17.0              | B                  |                  |                              |                      |                              |
| 515---4              |                   |            |                |                  | 25                       | 24.6              | C                  |                  |                              |                      |                              |

### LEGEND

**EER** — Energy Efficiency Ratio




\*Rated in accordance with ARI Standard 310-93.

†Electric resistance heater power and fan motor power.

\*\*All 265-v units require either the Accessory Hardwire Subbase Kit.



## RECEPTACLES AND FUSE TYPES

| UNIT NAMEPLATE VOLTAGE                         | 265   |   |   |
|--|---|---|---|
| OUTLET RATED VOLTS/AMPS                        | 277/15  | 277/20  | 277/30  |
| OUTLET BLADE CONFIGURATION                     |  A |  B |  C |
| NEMA CONFIGURATION                             | 7-15R   | 7-20R   | 7-30R   |
| TIME DELAY FUSE OR HACR CIRCUIT BREAKER (AMPS) | 15  | 20  | 30  |
| HEATER (KILOWATTS)                             | 2.3   | 3.4   | 5.0   |

### LEGEND

**HACR** — Heating, Air Conditioning, and Refrigeration

**NEMA** — National Electrical Manufacturers Association



# PRODUCT DATA (cont)

## INDOOR SOUND DATA

The table below indicates the approximate indoor sound level of a 52C unit. Tests were conducted in the Carrier Sound Testing Laboratory according to ARI (Air Conditioning and Refrigeration Institute) Noise Rating Standard 300 for non-ducted indoor air-conditioning equipment.

**INDOOR SOUND ESTIMATING TABLE**

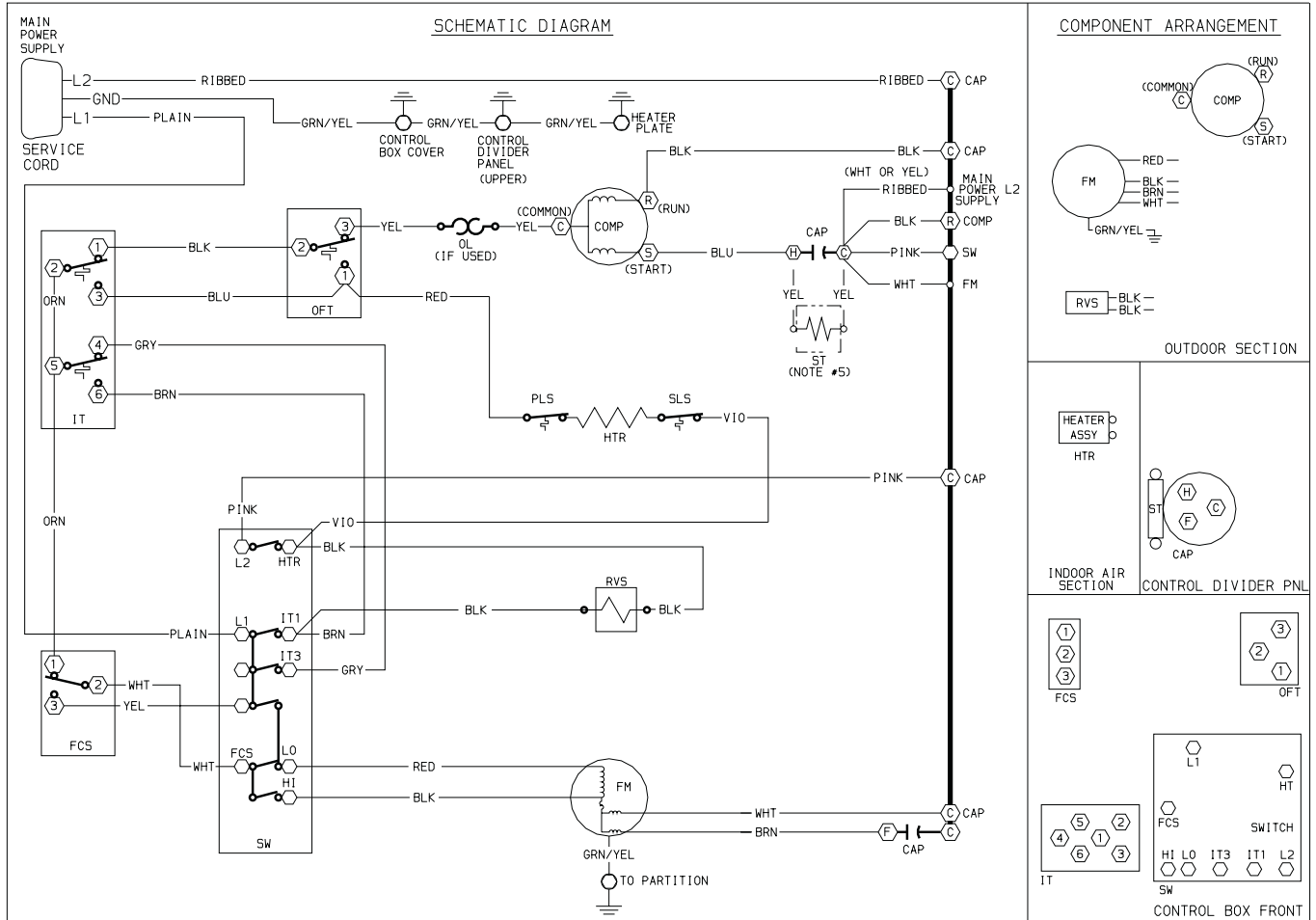
| OPERATING MODE | VOLTS | INDOOR SOUND ESTIMATING TABLE (dBA) |      |       |       |      |      |       |       | INDOOR SOUND ESTIMATING TABLE (BELS) |      |       |       |      |      |       |       |
|----------------|-------|-------------------------------------|------|-------|-------|------|------|-------|-------|--------------------------------------|------|-------|-------|------|------|-------|-------|
|                |       | Nominal Sizes (Btuh)                |      |       |       |      |      |       |       | Nominal Sizes (Btuh)                 |      |       |       |      |      |       |       |
|                |       | 52CQ                                |      |       |       | 52CE |      |       |       | 52CQ                                 |      |       |       | 52CE |      |       |       |
|                |       | 7000                                | 9000 | 12000 | 15000 | 7000 | 9000 | 12000 | 15000 | 7000                                 | 9000 | 12000 | 15000 | 7000 | 9000 | 12000 | 15000 |
| LOW COOL       | 208   | 53.3                                | 53.9 | 57.6  | 64.1  | 53.3 | 53.9 | 57.6  | 64.1  | 5.3                                  | 5.4  | 5.8   | 6.4   | 5.3  | 5.4  | 5.8   | 6.4   |
|                | 230   | 56.3                                | 57.2 | 60.3  | 65.2  | 56.3 | 57.2 | 60.3  | 65.2  | 5.6                                  | 5.7  | 6.0   | 6.5   | 5.6  | 5.7  | 6.0   | 6.5   |
|                | 265   | 56.2                                | 56.2 | 59.8  | 64.3  | 56.2 | 56.2 | 59.8  | 64.3  | 5.6                                  | 5.6  | 6.0   | 6.4   | 5.6  | 5.6  | 6.0   | 6.4   |
| HIGH COOL      | 208   | 58.6                                | 60.1 | 64.1  | 68.6  | 58.6 | 60.1 | 64.1  | 68.6  | 5.9                                  | 6.0  | 6.4   | 6.9   | 5.9  | 6.0  | 6.4   | 6.9   |
|                | 230   | 59.6                                | 60.8 | 65.9  | 68.2  | 59.6 | 60.8 | 65.9  | 68.2  | 6.0                                  | 6.1  | 6.6   | 6.8   | 6.0  | 6.1  | 6.6   | 6.8   |
|                | 265   | 60.1                                | 60.1 | 64.9  | 68.8  | 60.1 | 60.1 | 64.9  | 68.8  | 6.0                                  | 6.0  | 6.5   | 6.9   | 6.0  | 6.0  | 6.5   | 6.9   |
| FAN            | 208   | 57.7                                | 59.5 | 63.9  | 67.0  | 57.7 | 59.5 | 63.9  | 67.0  | 5.8                                  | 6.0  | 6.4   | 6.7   | 5.8  | 6.0  | 6.4   | 6.7   |
|                | 230   | 58.5                                | 60.3 | 65.8  | 68.1  | 58.5 | 60.3 | 65.8  | 68.1  | 5.9                                  | 6.0  | 6.6   | 6.8   | 5.9  | 6.0  | 6.6   | 6.8   |
|                | 265   | 59.1                                | 59.1 | 64.3  | 68.2  | 59.1 | 59.1 | 64.3  | 68.2  | 5.9                                  | 5.9  | 6.4   | 6.8   | 5.9  | 5.9  | 6.4   | 6.8   |
| LOW HEAT       | 208   | 53.8                                | 53.8 | 57.6  | 63.2  | 52.0 | 52.8 | 56.6  | 63.0  | 5.4                                  | 5.4  | 5.8   | 6.3   | 5.2  | 5.3  | 5.7   | 6.3   |
|                | 230   | 56.2                                | 56.5 | 60.2  | 65.4  | 55.5 | 55.5 | 59.2  | 65.4  | 5.6                                  | 5.7  | 6.0   | 6.5   | 5.6  | 5.6  | 5.9   | 6.5   |
|                | 265   | 56.0                                | 56.0 | 60.0  | 64.1  | 55.0 | 55.0 | 58.9  | 63.7  | 5.6                                  | 5.6  | 6.0   | 6.4   | 5.5  | 5.5  | 5.9   | 6.4   |
| HIGH HEAT      | 208   | 58.5                                | 59.2 | 64.1  | 66.9  | 57.7 | 59.5 | 63.9  | 67.0  | 5.9                                  | 5.9  | 6.4   | 6.7   | 5.8  | 6.0  | 6.4   | 6.7   |
|                | 230   | 59.4                                | 59.7 | 65.4  | 67.7  | 58.5 | 60.3 | 65.8  | 68.1  | 5.9                                  | 6.0  | 6.5   | 6.8   | 5.9  | 6.0  | 6.6   | 6.8   |
|                | 265   | 59.3                                | 59.3 | 64.4  | 68.4  | 59.1 | 59.1 | 64.3  | 68.2  | 5.9                                  | 5.9  | 6.4   | 6.8   | 5.9  | 5.9  | 6.4   | 6.8   |

**OUTDOOR SOUND ESTIMATING TABLE**

| OPERATING MODE | VOLTS | OUTDOOR SOUND ESTIMATING TABLE (dBA) |      |       |       |      |      |       |       | OUTDOOR SOUND ESTIMATING TABLE (BELS) |      |       |       |      |      |       |       |
|----------------|-------|--------------------------------------|------|-------|-------|------|------|-------|-------|---------------------------------------|------|-------|-------|------|------|-------|-------|
|                |       | Nominal Sizes (Btuh)                 |      |       |       |      |      |       |       | Nominal Sizes (Btuh)                  |      |       |       |      |      |       |       |
|                |       | 52CQ                                 |      |       |       | 52CE |      |       |       | 52CQ                                  |      |       |       | 52CE |      |       |       |
|                |       | 7000                                 | 9000 | 12000 | 15000 | 7000 | 9000 | 12000 | 15000 | 7000                                  | 9000 | 12000 | 15000 | 7000 | 9000 | 12000 | 15000 |
| LOW COOL       | 208   | 57.3                                 | 58.7 | 59.8  | 63.2  | 57.3 | 58.7 | 59.8  | 63.2  | 5.7                                   | 5.9  | 6.0   | 6.3   | 5.7  | 5.9  | 6.0   | 6.3   |
|                | 230   | 59.4                                 | 59.7 | 60.8  | 64.4  | 59.4 | 59.7 | 60.8  | 64.4  | 5.9                                   | 6.0  | 6.1   | 6.4   | 5.9  | 6.0  | 6.1   | 6.4   |
|                | 265   | 58.5                                 | 58.5 | 60.9  | 63.9  | 58.5 | 58.5 | 60.9  | 63.9  | 5.9                                   | 5.9  | 6.1   | 6.4   | 5.9  | 5.9  | 6.1   | 6.4   |
| HIGH COOL      | 208   | 59.3                                 | 61.1 | 62.7  | 66.2  | 59.3 | 61.1 | 62.7  | 66.2  | 5.9                                   | 6.1  | 6.3   | 6.6   | 5.9  | 6.1  | 6.3   | 6.6   |
|                | 230   | 60.1                                 | 60.8 | 63.9  | 66.6  | 60.1 | 60.8 | 63.9  | 66.6  | 6.0                                   | 6.1  | 6.4   | 6.7   | 6.0  | 6.1  | 6.4   | 6.7   |
|                | 265   | 61.0                                 | 61.0 | 63.5  | 67.4  | 61.0 | 61.0 | 63.5  | 67.4  | 6.1                                   | 6.1  | 6.4   | 6.7   | 6.1  | 6.1  | 6.4   | 6.7   |
| FAN            | 208   | 57.4                                 | 57.3 | 61.8  | 65.0  | 57.4 | 57.3 | 61.8  | 65.0  | 5.7                                   | 5.7  | 6.2   | 6.5   | 5.7  | 5.7  | 6.2   | 6.5   |
|                | 230   | 58.4                                 | 58.2 | 63.4  | 66.3  | 58.4 | 58.2 | 63.4  | 66.3  | 5.8                                   | 5.8  | 6.3   | 6.6   | 5.8  | 5.8  | 6.3   | 6.6   |
|                | 265   | 59.3                                 | 59.3 | 63.2  | 67.9  | 59.3 | 59.3 | 63.2  | 67.9  | 5.9                                   | 5.9  | 6.3   | 6.8   | 5.9  | 5.9  | 6.3   | 6.8   |
| LOW HEAT       | 208   | 57.3                                 | 58.9 | 60.3  | 64.4  | 52.2 | 55.5 | 56.9  | 61.3  | 5.7                                   | 5.9  | 6.0   | 6.4   | 5.2  | 5.6  | 5.7   | 6.1   |
|                | 230   | 59.0                                 | 61.2 | 62.2  | 66.2  | 55.0 | 57.8 | 58.8  | 62.7  | 5.9                                   | 6.1  | 6.2   | 6.6   | 5.5  | 5.8  | 5.9   | 6.3   |
|                | 265   | 61.2                                 | 61.2 | 61.9  | 65.1  | 55.2 | 55.2 | 58.1  | 63.2  | 6.1                                   | 6.1  | 6.2   | 6.5   | 5.5  | 5.5  | 5.8   | 6.3   |
| HIGH HEAT      | 208   | 60.1                                 | 61.4 | 63.6  | 67.4  | 57.4 | 57.3 | 61.8  | 65.0  | 6.0                                   | 6.1  | 6.4   | 6.7   | 5.7  | 5.7  | 6.2   | 6.5   |
|                | 230   | 60.5                                 | 62.5 | 65.4  | 68.3  | 58.4 | 58.2 | 63.4  | 66.3  | 6.1                                   | 6.3  | 6.5   | 6.8   | 5.8  | 5.8  | 6.3   | 6.6   |
|                | 265   | 62.2                                 | 62.2 | 64.7  | 68.7  | 59.3 | 59.3 | 63.2  | 67.9  | 6.2                                   | 6.2  | 6.5   | 6.9   | 5.9  | 5.9  | 6.3   | 6.8   |

**SOUND TRANSMISSION COEFFICIENT (STC) = 25**

# WIRING DIAGRAMS



## COMPONENT LEGEND

|      |   |
|------|---|
|      | COMPONENT CONNECTION (MARKED)                           |
|      | COMPONENT CONNECTION (UNMARKED)                         |
|      | ACCESSORY OR OPTIONAL WIRING                            |
|      | TO INDICATE COMMON POTENTIAL ONLY NOT TO REPRESENT WIRE |
| CAP  | CAPACITOR   |
| COMP | COMPRESSOR  |
| FM   | FAN MOTOR   |
| FCS  | FAN CYCLE SWITCH  |
| HTR  | HEATER  |
| IT   | INDOOR THERMOSTAT                                       |
| OFT  | OUTDOOR FROST THERMOSTAT                                |
| OL   | OVERLOAD  |
| PLS  | PRIMARY LIMIT SWITCH                                    |
| RVS  | REVERSING VALVE SOLENOID                                |
| SLS  | SECONDARY LIMIT SWITCH                                  |
| ST   | START THERMISTOR  |
| SW   | SWITCH  |

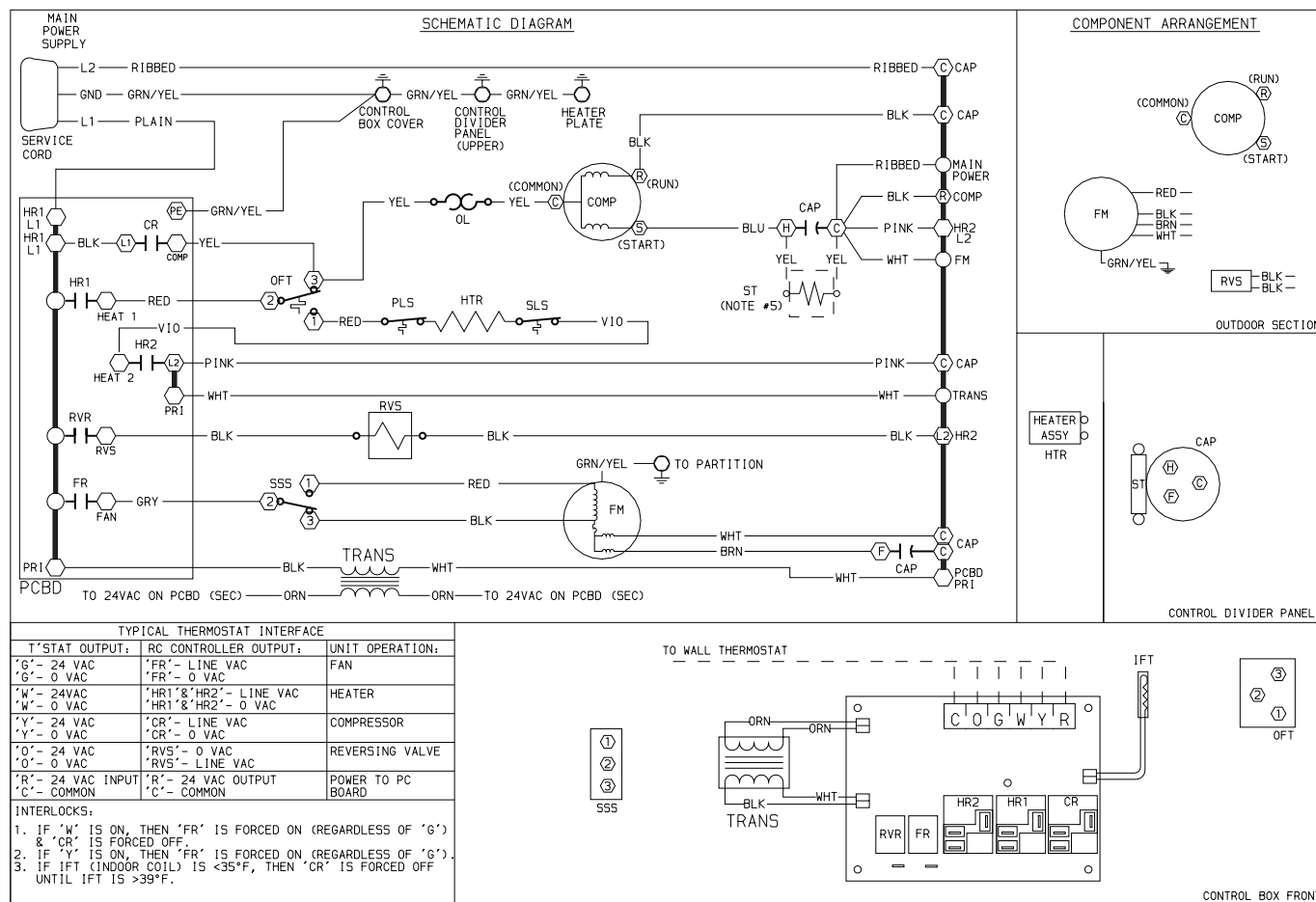
## NOTES:

1. RECOMMENDED FOR USE ON GROUNDED POWER SUPPLY ONLY.
2. COMPRESSOR AND FAN MOTOR THERMALLY PROTECTED.
3. USE COPPER CONDUCTORS ONLY.
4. ALL WIRING MUST CONFORM WITH N.E.C. AND LOCAL CODES.
5. DASHED LINES INDICATE COMPONENTS WHEN USED.

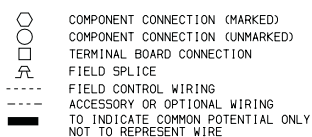
| POSITION                | CONTACTS MADE                   |
|-------------------------|---------------------------------|
| <b>SELECTOR SWITCH</b>  |                                 |
| OFF                     | NONE                            |
| FAN                     | L1 TO L0                        |
| LO HEAT                 | L1 TO IT1, FCS TO L0, L2 TO HTR |
| HI HEAT                 | L1 TO IT1, FCS TO HI, L2 TO HTR |
| LO COOL                 | L1 TO IT3, FCS TO L0            |
| HI COOL                 | L1 TO IT3, FCS TO HI            |
| <b>FAN CYCLE SWITCH</b> |                                 |
| CYCLE                   | 1 TO 2                          |
| CONSTANT                | 3 TO 2                          |

**52CQ — Typical Wiring Schematic for Standard Units**

## WIRING DIAGRAMS (cont)



### COMPONENT LEGEND



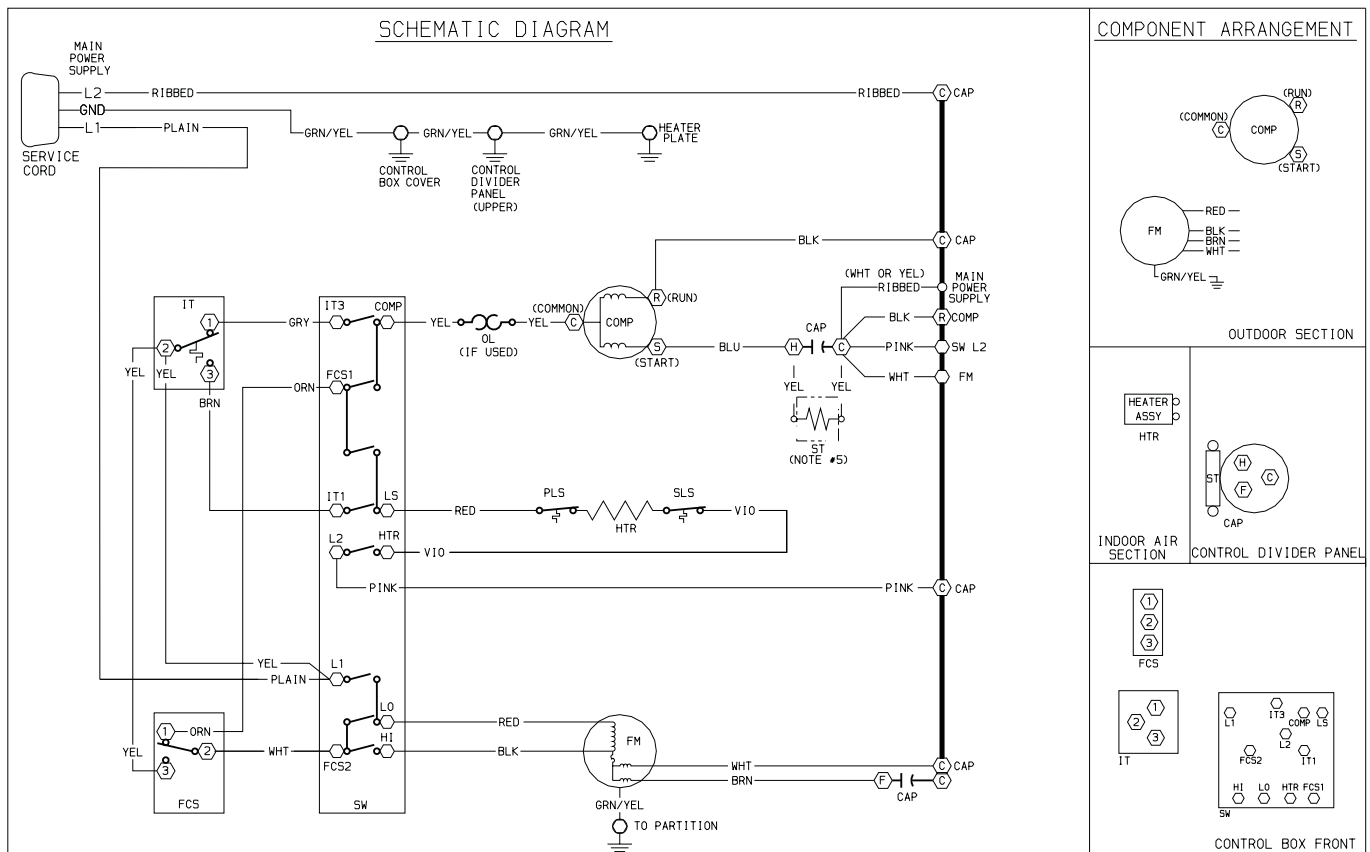
|      |                          |
|------|--------------------------|
| CAP  | CAPACITOR                |
| COMP | COMPRESSOR               |
| FM   | FAN MOTOR                |
| HTR  | HEATER                   |
| IFT  | INDOOR FROST THERMISTOR  |
| OFT  | OUTDOOR FROST THERMOSTAT |
| RVS  | REVERSING VALVE SOLENOID |
| OL   | OVERLOAD                 |
| PLS  | PRIMARY LIMIT SWITCH     |
| SLS  | SECONDARY LIMIT SWITCH   |
| SSS  | SPEED SELECTOR SWITCH    |

|       |                       |
|-------|-----------------------|
| ST    | START THERMISTOR      |
| TRANS | TRANSFORMER           |
| PCBD  | PRINTED CIRCUIT BOARD |
| - HR1 | HEATER RELAY          |
| - HR2 | HEATER RELAY          |
| - CR  | COMPRESSOR RELAY      |
| - FR  | FAN RELAY             |
| - RVR | REVERSING VALVE RELAY |

NOTES:

1. RECOMMENDED FOR USE ON GROUND POWER SUPPLY ONLY.
2. COMPRESSOR AND FAN MOTOR THERMALLY PROTECTED.
3. USE COPPER CONDUCTORS ONLY.
4. ALL WIRING MUST CONFORM WITH N.E.C. AND LOCAL CODES.
5. DASHED LINES INDICATE COMPONENTS WHEN USED.
6. FIELD CONTROL WIRE SUITABLE FOR N.E.C. CLASS 2 CONTROL CIRCUIT. AT 24 VOLTS.

## 52CQ — Typical Wiring Schematic for Wall Thermostat Control Units



### COMPONENT LEGEND

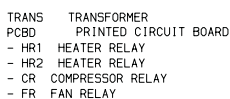
|      |  |
|------|--|
| ○    | COMPONENT CONNECTION (MARKED)                              |
| ○    | COMPONENT CONNECTION (UNMARKED)                            |
| ---  | ACCESSORY OR OPTIONAL WIRING                               |
| —    | TO INDICATE COMMON POTENTIAL ONLY<br>NOT TO REPRESENT WIRE |
| CAP  | CAPACITOR  |
| COMP | COMPRESSOR   |
| FM   | FAN MOTOR  |
| FCS  | FAN CYCLE SWITCH   |
| HTR  | HEATER   |
| IT   | INDOOR THERMOSTAT  |
| OL   | OVERLOAD   |
| PLS  | PRIMARY LIMIT SWITCH                                       |
| SLS  | SECONDARY LIMIT SWITCH                                     |
| ST   | START THERMISTOR   |
| SW   | SWITCH   |

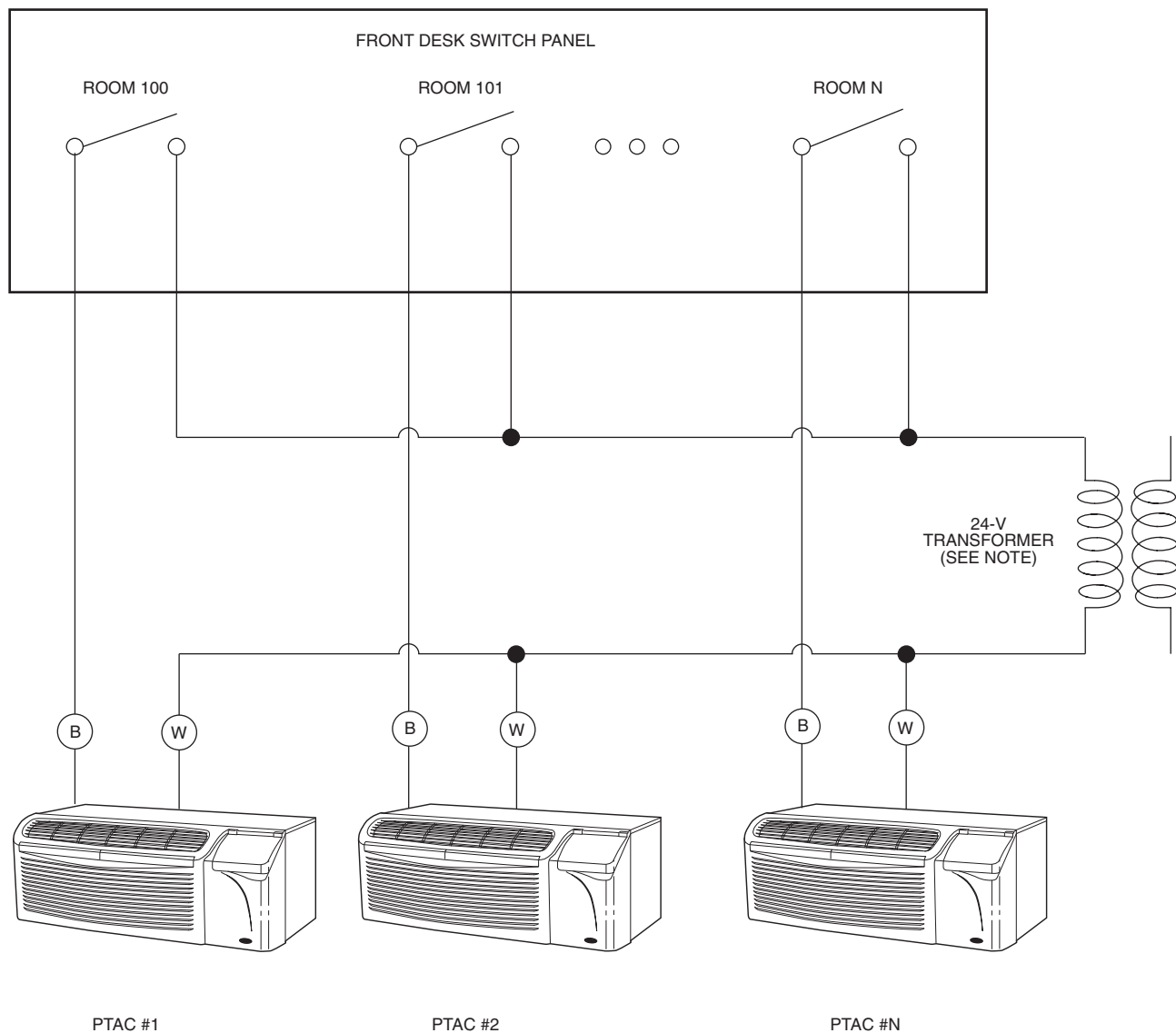
### NOTES:

1. RECOMMENDED FOR USE ON GROUNDED POWER SUPPLY ONLY.
2. COMPRESSOR AND FAN MOTOR THERMALLY PROTECTED.
3. USE COPPER CONDUCTORS ONLY.
4. ALL WIRING MUST CONFORM WITH N.E.C. AND LOCAL CODES.
5. DASHED LINES INDICATE COMPONENTS WHEN USED.

| POSITION         | CONTACTS MADE                                |
|------------------|--|
| SELECTOR SWITCH  |  |
| OFF              | NONE   |
| FAN              | L1 TO L0, FCS1 TO LS                         |
| LO HEAT          | FCS2 TO L0, IT1 TO LS, L2 TO HTR, FCS1 TO LS |
| HI HEAT          | FCS2 TO HI, IT1 TO LS, L2 TO HTR, FCS1 TO LS |
| LO COOL          | FCS2 TO L0, COMP TO FCS1, COMP TO IT3        |
| HI COOL          | FCS2 TO HI, COMP TO FCS1, COMP TO IT3        |
| FAN CYCLE SWITCH |  |
| CYCLE            | 1 TO 2                                       |
| CONTINUOUS       | 3 TO 2                                       |

## 52CE — Typical Wiring Schematic for Standard Units





#### LEGEND

**AWG** — American Wire Gage  
**B** — Black  
**PTAC** — Packaged Terminal Air Conditioner  
**W** — White

#### NOTES:

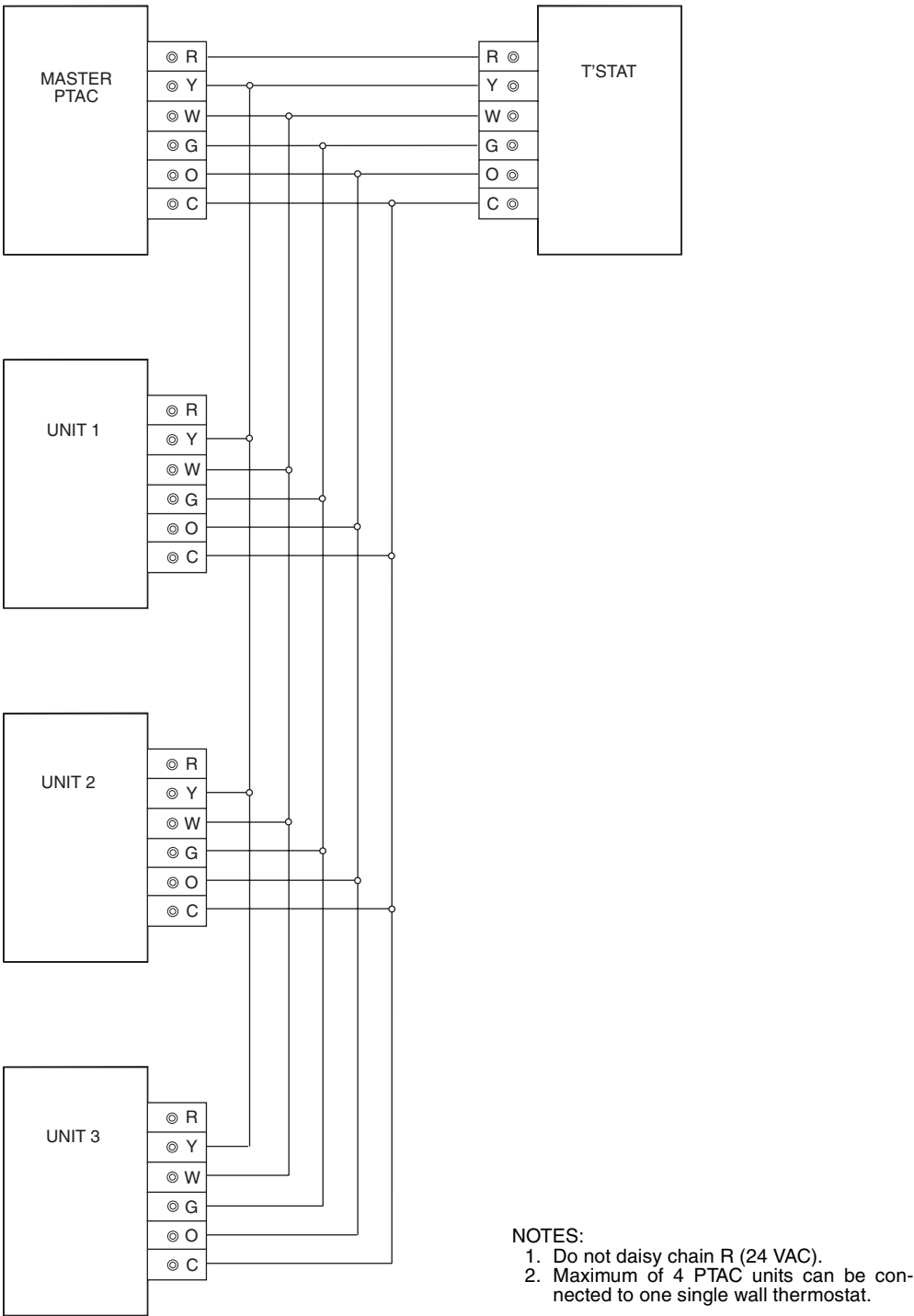
- To size transformer, use the following equation:  
Quantity of PTAC units x 12 va = Transformer Size (va)  
Example: 110 PTAC Units x 12 va = 1320 va Transformer

- Following are recommended wire sizes:

| AWG WIRE SIZE NO. | MAXIMUM LENGTH (ft) |
|-------------------|---------------------|
| 24                | 400                 |
| 22                | 600                 |
| 20                | 900                 |
| 18                | 1500                |
| 16                | 2000                |

**Typical Wiring Schematic for Energy Management Kit**

# WIRING DIAGRAMS (cont)



Typical Wiring for Multiple 52C PTAC Units Connected to 1 Wall Thermostat



# GUIDE SPECIFICATIONS

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## PACKAGED TERMINAL COOLING UNIT WITH HEAT PUMP OR ELECTRIC HEATING

### HVAC Guide Specifications

Size Range:   Cooling:   6,900 to 15,000 Btuh  
                  Heating:   6,000 to 14,700 Btuh Heat Pump  
                                6,400 to 17,000 Btuh Electric

Carrier Model Numbers: 52CE Cooling  
  with Electric Heat  
  52CQ Heat Pump

## Part 1 — General

### 1.01 SYSTEM DESCRIPTION

Single piece, thru-the-wall electrically controlled unit using hermetic rotary compressor for cooling and heat pump or electric resistance heat, as shown on the contract drawings.

### 1.02 QUALITY ASSURANCE

Unit shall be rated in accordance with ARI Standard 310/380-93 and certified by UL and UL, Canada.

### 1.03 DELIVERY, STORAGE, AND HANDLING

Unit shall be stored and handled per manufacturer's recommendations.

## Part 2 — Products

### 2.01 EQUIPMENT

#### A. General:

Factory-assembled, single-piece heating and/or cooling unit. Contained within the unit enclosure shall be compressor, coils, fans and fan motor, heating means, controls, all wiring and piping, and a full refrigerant charge (R-22).

#### B. Front Panel (supplied with unit) and Wall Sleeve:

Front panel shall be constructed of plastic material. Front panel to have louvers in front surface. Wall sleeve shall be constructed of plastic or metal.

#### C. Fans and Motor:

1. Evaporator (indoor) fan shall be a single-inlet corrosion-resistant, plastic squirrel cage blower with discharging air upwards. Fan shall be dynamically balanced.
2. Condenser (outdoor) fan shall be a propeller type with corrosion-resistant, plastic finish, discharging air out the rear of the unit, and shall be dynamically balanced.
3. Motor shall be totally enclosed, permanently lubricated, and multiple speed.

#### D. Compressor:

The compressor shall be fully hermetic with internal and external vibration isolation.

#### E. Coils:

The coils shall have aluminum plate fins mechanically bonded to seamless copper tubes internally enhanced (grooved) with all joints brazed.

#### F. Refrigerant Components:

All piping, compressor, and expansion devices shall be included.

#### G. Controls and Safeties:

1. Controls shall consist of rotary OFF/FAN/HEAT/COOL operation and adjustable thermostat with upper and lower limits, VENT OPEN/CLOSE, and FAN CYCLE switches. Additional controls for heat pumps include outdoor coil defrost thermostat.
2. Safeties shall consist of automatic reset over-temperature and overcurrent protection for *compressor*; inherent, automatic reset over-temperature protection for *fan motor*; two overtemperature protectors for *heater*.

#### H. Operating Characteristics:

Unit shall be capable of starting and running at 115 F ambient outdoor temperature per maximum load criteria of ARI Standard 310/380. Compressor with standard controls shall be capable of operation down to approximately 35 F ambient outdoor temperature (20 F coil temperature) for heat pump and 55 F ambient outdoor temperature for cooling.

#### I. Electrical Requirements:

All units are provided with power cords. The 265 V unit requires a field-installed electrical subbase accessory.

230/208-Volt: Shall be prewired with one plug to use with appropriate wall receptacle as specified on unit nameplate.

265-Volt: Shall be cord-connected or hardwired into field-installed electrical subbase.

#### J. Filters:

1. Two washable type that filter supply air.
2. One-piece washable type filter in vent door filters outdoor air.

#### K. Corrosion Protection (CPRP):

Corrosion Protection (CPRP), for coastal or corrosive environments, prolongs the life of the product. Minimum requirements are:

1. All outdoor-exposed sheet metal parts shall be coated with a polyester powder coat paint.
2. Compressor and outdoor-fan motor finish shall be capable of withstanding 500 hours of salt spray testing per ASTM B-117.
3. Compressor mounting screws shall be Sermagard coated.
4. Outdoor coil fin stock shall be coated and able to withstand 1000 hours of salt spray testing per ASTM B-117.
5. Outdoor coil tube sheets must be made of 316L stainless steel.

# GUIDE SPECIFICATIONS (cont)

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## L. Special Features:

Certain standard features are not applicable when the features designated are specified. Contact your local Carrier Sales Office for amending specifications.

1. Factory-installed electric heater for use with heat pump or heat/cool units
2. RC — Wall thermostat control permits unit control from remote wall thermostat
3. Standard grille (aluminum)
4. Architectural grille (polymeric or aluminum)

5. Hardwire kit
6. Drain kit
7. Subbase (non-electrical and electrical)
8. Wall sleeve (UL94-5V rated or metal 18 gage)
9. Lateral duct kit
10. Energy management accessory kit
11. Air deflector
12. Security door kit
13. Wall thermostats
14. Wall thermostat retrofit interface kit
15. Replacement filters

# TYPICAL WARRANTY

## Carrier Packaged Terminal Air Conditioner Warranty

**FULL ONE-YEAR WARRANTY** — During the first year after purchase, CARRIER will, through its authorized independent servicing dealers or service stations\*, and free of charge to the user or subsequent users, repair or replace any parts which are defective in material or workmanship. The replacement part can be a new or remanufactured part as provided at CARRIER'S sole option.

**FULL EXTENDED FOUR-YEAR WARRANTY ON SEALED REFRIGERATION SYSTEM ONLY** — During the second through fifth years after date of original purchase, CARRIER will, through its authorized servicing dealers and service stations\*, and free of charge to the end user or subsequent users, repair or replace the compressor, condenser, evaporator or connecting tubing if defective in material or workmanship. This includes system refrigeration charge. The replacement part can be new or a remanufactured part as provided at CARRIER'S sole option.

**LIMITED EXTENDED FOUR-YEAR WARRANTY ON NON-SEALED REFRIGERATION SYSTEM ONLY** — During the second through fifth years after date of original purchase, Carrier will, through its authorized servicing dealers and service stations and free of charge to the end user or subsequent users, repair or replace any non-sealed system part (motor, solenoid, thermostat, relay, switch, capacitor, capacitor, overload, drain valve, bulb heater, fan, stator) if defective in material or workmanship. The replacement part can be new or a remanufactured part at CARRIER'S sole option. THIS LIMITED WARRANTY DOES NOT INCLUDE LABOR, user is responsible for labor, including cost of diagnosis of problem, removal and transportation of the air conditioner to and from the service center, and reinstallation charges necessary to accomplish repair.

**LIMITATION OF WARRANTIES** — ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH EACH LIMITED WARRANTY IS GIVEN AND APPLIES. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON WHATSOEVER.

ALL WORK UNDER THE TERMS OF THIS WARRANTY SHALL BE PERFORMED DURING NORMAL WORKING HOURS. ALL REPLACEMENT PARTS, WHETHER NEW OR REMANUFACTURED, ASSUME AS THEIR WARRANTY PERIOD ONLY THE REMAINING TIME PERIOD OF THIS WARRANTY.

### CARRIER WILL NOT BE RESPONSIBLE FOR:

1. Damage due to failure to perform normal maintenance as outlined in the owner's manual.
2. Instruction on methods of control and use of air conditioning unit after initial installation.
3. Damage or repairs needed as a consequence of faulty installation or application. This is the responsibility of the installer.
4. Failure to start due to voltage conditions, blown fuses, open circuit breakers or any other damages due to the inadequacy or interruption of electrical services.
5. Damage or repairs needed as a consequence of any misapplication, abuse, unauthorized alteration, improper servicing or operation.
6. Damage as a result of floods, winds, fires, lightning, accidents, corrosive environment, or other conditions beyond the control of CARRIER. EXCEPT TO CORROSIVE ENVIRONMENT IN ABOVE PARAGRAPH — Packaged terminal units (52 Series) built with corrosion protection are exempt from the exclusion — "Corrosive Environment." The unit model number is identified on the nameplate with a CP suffix.
7. Reimbursement for replacement parts or repair services which are not supplied or designated by CARRIER and which are specifically covered under this warranty.
8. CARRIER products installed outside the continental U.S.A., Alaska, Hawaii and Canada.
9. Shipping damage or damage as a result of transporting the unit. This is the responsibility of the selling dealer or the authorized Room Air Conditioner service station.
10. ANY SPECIAL, INDIRECT OR CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

NOTE: Service and Maintenance items excluded in this warranty may be covered by a separate service agreement through the seller at time of purchase.

\* Authorized independent dealers or service stations are registered with Carrier Air Conditioning thru its distributor organization.

**This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.**

Form No. 530-122 (New 4/01)

# TYPICAL WARRANTY (cont)

## Carrier Corporation

**IF YOUR AIR CONDITIONER DOES NOT WORK, FOLLOW THESE STEPS IN ORDER:**

1. CHECK THE THINGS YOU CAN DO YOURSELF. These include being sure the air conditioner is plugged in firmly in an appropriate receptacle, checking the fuse or circuit breaker and ensuring its replacement, or resetting, if necessary, and rereading the instruction book to ensure that all controls are set properly. By doing this you can save money. Many unnecessary service calls result in the serviceman doing what the owner can do for him or herself.
2. CONTACT YOUR DEALER OR THE CARRIER AUTHORIZED SERVICE CENTER HE RECOMMENDS. They have been set up to handle the great majority of all possible service problems. The quickest, surest and best way to get your air conditioner back in service is to use this step before proceeding further.
3. CONTACT THE CARRIER DISTRIBUTOR SERVING YOUR AREA. Your dealer can give you his name or you can consult your yellow pages.
4. CONTACT CARRIER IF A SATISFACTORY SOLUTION IS NOT REACHED IN STEPS 2 AND 3.  
Carrier Air Conditioning  
Consumer Relations Department  
Carrier Parkway, P.O. Box 4808  
Syracuse, New York 13221  
Telephone: 1-800-894-6449

# ACCESSORIES

| ACCESSORY                              | LITERATURE FORM NUMBER | PART NUMBER   | DESCRIPTION  |
|--|------------------------|---|--|
| Wall Sleeves                           | 52S-48SI               | WALL-SLEEVE-1PK<br>WALL-SLEEVE-9PK<br>SLEEVE-INSUL-1PK  | Non-Insulated Plastic Wall Sleeve, 1 per pack<br>Non-Insulated Plastic Wall Sleeve, 9 per pack<br>Insulated Plastic Wall Sleeve, 1 per pack  |
|  | 52S-50SI               | SLEEVE-STEEL-1PK  | Insulated Metal Wall Sleeve, 1 per pack  |
|  | 52S-49SI*              | SLEEVE-EXT24-1PK  | Extended Metal Wall Sleeve for Deep Wall Applications (24 in. deep), 1 per pack  |
| Exterior Grilles†                      | 52S-59SI               | GRILLE-ALU-STAMP  | Stamped Aluminum Exterior Grille, Clear Finish   |
|  | 52S-58SI               | GRILLE-PLA-BROWN<br>GRILLE-PLA-BEIGE  | Plastic Architectural Rear Grille, Brown<br>Plastic Architectural Rear Grille, Beige   |
|  | 52S-60SI               | GRILLE-ALU-CLEAR<br>GRILLE-ALU-WHITE<br>GRILLE-ALU-BRONZ<br>GRILLE-ALU-MBRNZ<br>GRILLE-ALU-BROWN<br>GRILLE-ALU-BEIGE<br>GRILLE-ALU-ALPIN<br>GRILLE-ALU-PEACH<br>GRILLE-ALU-MELON<br>GRILLE-ALU-LGREY<br>GRILLE-ALU-SGREY<br>GRILLE-ALU-RDBRK<br>GRILLE-ALU-BLUE<br>GRILLE-ALU-GREEN | Aluminum Architectural Exterior Grille, Clear Finish<br>Aluminum Architectural Exterior Grille, White<br>Aluminum Architectural Exterior Grille, Light Bronze<br>Aluminum Architectural Exterior Grille, Medium Bronze<br>Aluminum Architectural Exterior Grille, Brown (Dark Bronze)<br>Aluminum Architectural Exterior Grille, Beige<br>Aluminum Architectural Exterior Grille, Alpine (matches Carrier Wall Sleeve)<br>Aluminum Architectural Exterior Grille, Peach<br>Aluminum Architectural Exterior Grille, Melon<br>Aluminum Architectural Exterior Grille, Light Grey<br>Aluminum Architectural Exterior Grille, Slate Gray<br>Aluminum Architectural Exterior Grille, Red Brick<br>Aluminum Architectural Exterior Grille, Blue<br>Aluminum Architectural Exterior Grille, Green |
|  | 52C,P-1SI              | SUBBASE-NON-ELEC  | Non-electrical Subbase   |
|  | 52C,P-2SI              | SUBBASE-230V-15A<br>SUBBASE-230V-20A<br>SUBBASE-230V-30A<br>SUBBASE-265V-15A<br>SUBBASE-265V-20A<br>SUBBASE-265V-30A  | Electrical subbase with factory-installed 208/230V, 15 amp receptacle<br>Electrical subbase with factory-installed 208/230V, 20 amp receptacle<br>Electrical subbase with factory-installed 208/230V, 30 amp receptacle<br>Electrical subbase with factory-installed 265V, 15 amp receptacle<br>Electrical subbase with factory-installed 265V, 20 amp receptacle<br>Electrical subbase with factory-installed 265V, 30 amp receptacle   |
|  | 52C,P-3SI              | SUBBASE-HARDWIRE  | Electrical subbase with factory-installed hardwire kit (230/208V and 265V)   |
|  | 52C,P-8SI              | SUBBASE-HW-KIT  | Subbase Hardwire Kit, to make a non-electrical subbase, hardwired in the field (230/208V and 265V)   |
|  | 52C,P-6SI              | RECEPT-230V-15A<br>RECEPT-230V-20A<br>RECEPT-230V-30A<br>RECEPT-265V-15A<br>RECEPT-265V-20A<br>RECEPT-265V-30A  | Subbase 208/230V, 15 amp Receptacle Kit, to add a receptacle to a non-electrical subbase in the field<br>Subbase 208/230V, 20 amp Receptacle Kit, to add a receptacle to a non-electrical subbase in the field<br>Subbase 208/230V, 30 amp Receptacle Kit, to add a receptacle to a non-electrical subbase in the field<br>Subbase 265V, 15 amp Receptacle Kit, to add a receptacle to a non-electrical subbase in the field<br>Subbase 265V, 20 amp Receptacle Kit, to add a receptacle to a non-electrical subbase in the field<br>Subbase 265V, 30 amp Receptacle Kit, to add a receptacle to a non-electrical subbase in the field   |
|  | 52C,P-4SI              | SUBBASE-SWITCH  | Field Installable Switch kit for an electrical subbase   |
|  | 52C,P-5SI              | SUBBASE-FUSE-15A<br>SUBBASE-FUSE-20A<br>SUBBASE-FUSE-30A  | Field-Installed Fuse Kit (15 amp) for electrical subbase<br>Field-Installed Fuse Kit (20 amp) for electrical subbase<br>Field-Installed Fuse Kit (30 amp) for electrical subbase   |
| Electrical Connections                 | 52C,P-11SI             | HARDWIRE-KIT-1PK  | Permanent power connection to the unit (includes 36" of flexible conduit and unit-mounted connector, 230/208V and 265V) 1 per pack   |
| Condensate Drain Kit                   | 52S-53SI               | DRAIN-KIT-4PK   | Attaches to wall sleeve for controlled internal or external disposal of condensate 4 per pack  |
| Wall Thermostats                       | N/A                    | HH01AD045<br>TSTATCCBPC01-B<br>TSTATCCBPH01-B<br>TSTATCCPAC01-B<br>TSTATCCPHP01-B   | Electro-mechanical Wall Thermostat (Heat/Cool and Heat Pump)<br>Value Series Electronic Thermostat w/Digital display (Heat/Cool Models)<br>Value Series Electronic Thermostat w/Digital display (Heat Pump Models)<br>7-Day Programmable Electronic Thermostat (Heat/Cool Models)<br>7-Day Programmable Electronic Thermostat (Heat Pump Models)   |
| Wall Thermostat Interface Retrofit Kit | 52C,P-7SI              | RC-FIELDKIT230HC<br>RC-FIELDKIT230HP<br>RC-FIELDKIT265HC<br>RC-FIELDKIT265HP  | Field-installed wall thermostat retrofit kit to convert a standard 230V Heat/Cool unit to an RC unit. Wall thermostat sold separately.<br>Field-installed wall thermostat retrofit kit to convert a standard 230V Heat Pump unit to an RC unit. Wall thermostat sold separately.<br>Field-installed wall thermostat retrofit kit to convert a standard 265V Heat/Cool unit to an RC unit. Wall thermostat sold separately.<br>Field-installed wall thermostat retrofit kit to convert a standard 265V Heat Pump unit to an RC unit. Wall thermostat sold separately.   |
| Replacement Filters                    | N/A                    | AIR-FILTER-10PK   | Replacement air filters in package of 10   |
| Energy Management                      | 52C,P-10SI             | EM-KIT  | Allows unit to be turned on and off from a remote location (includes freeze guard protection)  |
| Locking Security Control Door          | 52C,P-13SI             | SECURITY-DOOR   | Key-locking security door to prevent access to heating and cooling controls  |
| Lateral Duct Kit                       | 52C,P-14SI             | LATERAL-DUCT  | Ductwork to allow one unit to heat and cool two rooms (plenum plus extension duct and registers)   |
| Air Deflector                          | 52C,P-9SI              | DEFLECTOR-1PK   | Lateral air deflector, with individually adjustable louvers, to enhance air circulation, 1 per pack  |

\*Extended metal wall sleeves also available in 26 in. and 28 in. deep.

†Custom colors are also available.





